

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Air Quality

DOCUMENT NUMBER: 273-4000-003

TITLE: AQ Compliance Assurance Policy for Municipal Waste Incinerators, including Revisions

AUTHORITY: 35 P.S. Sec. 4001-4005 (Air Pollution Control Act) and Act 95 (75 PA C.S. Section 4706())

POLICY: Actions for violations of monitoring requirements for municipal waste incinerators. Includes changes adopted to accommodate changes caused by revision to other documents.

PURPOSE:

The purpose of this policy is to establish uniform criteria for assessing monetary penalties for exceedances of emission standards and data availability requirements through agreements rather than criminal citations or civil penalty actions. The Department has found agreements to be effective in resolving violations without resorting to litigation. The benefit of this policy to the source owner is certainty in determining liabilities should violations occur.

DISCLAIMER:

The policies and procedures outlined in this guidance document are intended to supplement existing requirements. Nothing in the policies or procedures shall affect different statutory or regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is not intent on the part of the Department to give these rules that weight or deference. This document establishes the framework for the exercise of DEP's administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

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MARCH 1995

MINOR REVISIONS TO

July 1989

AIR QUALITY COMPLIANCE ASSURANCE POLICY FOR MUNICIPAL WASTE INCINERATORS

Approved by: (original signed by James M. Salvaggio on 03/20/95)
Director, Bureau of Air Quality Control Date

INTRODUCTION

These minor revisions were adopted to accommodate most permit changes resulting from the March 26, 1993 changes made to the *Air Quality Permitting Criteria including Best Available Technology for Municipal Waste Incineration Facilities* (Criteria). The remaining sections in the July 1989 policy still apply to the new permit as appropriate.

Penalty tables are added in this addendum for the different averaging times contained in these new Criteria.

REVISION 1

Section IV.B.1.

- A.2. Hydrochloric acid (HCl) emissions shall not exceed 25 ppm, 24-hour daily arithmetic average, corrected to 7% O₂ on a dry basis; or, be reduced 95% (by weight) on a 24-hour daily arithmetic average.**

ENFORCEMENT:

A daily penalty is assessed for HCl if the concentration limit established in the *plan approval* (25 ppmv maximum) is exceeded and the reduction established in the *plan approval* (minimum 95%) is not achieved. The penalty is based on how much the concentration exceeded the limit and how much less than the required reduction was achieved. The equation for this is:

$$S_{HCl} = (C - C_{HCl})(R_{HCl} - R)$$

where: C = concentration of HCl (ppmv) for violation day
 C_{HCl} = concentration limit (ppmv) established in *plan approval*; ≤ 25
 R_{HCl} = reduction requirement (%) established in *plan approval*; ≥ 95
 R = reduction percentage achieved for

violation day

The S_{HCl} defines the base penalty as follows:

S_{HCl}	Base Penalty (B_H)
1 - 60	\$100
61 - 120	\$200
121 - 180	\$400
> 180	\$800

The daily penalty for HCl violations is the base penalty multiplied by the penalty factor:

$$P_H = F B_H$$

REVISION 2

Section IV.B.1.

- A.2. Sulfur dioxide (SO_2) emissions shall not exceed 30 ppmv, 24-hour daily arithmetic average, corrected to 7% O_2 on a dry basis; or, shall be reduced 80% (by weight) on a 24-hour daily geometric average.

ENFORCEMENT:

A daily penalty is assessed for SO_2 if the concentration limit established in the *plan approval* (30 ppmv maximum) is exceeded for a 24-hour daily arithmetic average **and** the required reduction established in the *plan approval* (minimum 80 is not achieved for a 24-hour daily geometric average. The penalty will be based on how much the concentration exceeded the limit and how much less than the required reduction was achieved. The equation for this is:

$$S_{SO_2} = (C - C_{SO_2})(R_{SO_2} - R)$$

where: C = concentration of SO_2 (ppmv) for violation day
 C_{SO_2} = concentration limit (ppmv) established in *plan approval*; ≤ 30
 R_{SO_2} = reduction requirement (%) established in *plan approval*; ≥ 80
R = reduction percentage achieved for violation day

The S_{SO_2} defines the base penalty as follows:

**Base
Penalty**

S_{SO_2}	(B_s)
1 - 32	\$100
33 - 64	\$200
65 - 96	\$400
> 96	\$800

The daily penalty for SO_2 violations is the base penalty multiplied by the penalty factor:

$$P_s = F B_s$$

REVISION 3

Section IV.B.1.

A.3. Carbon monoxide (CO) emissions, as measured at a location upstream of the control devices, shall not exceed the following concentrations corrected to 7% O₂ on a dry basis based on type of combustor:

Modular excess air	50 ppmv on a 4-hour block
Modular starved air	arithmetic average
Bubbling fluidized bed combustor	100 ppmv on a 4-hour block
Circulating fluidized bed combustor	arithmetic average
Mass burn refractory	
Mass burn waterwall	
Coal/RDF mixed fuel	150 ppmv on a 4-hour block
	arithmetic average
Mass burn rotary waterwall	100 ppmv on a 24-hour daily
RDF stoker	arithmetic average

ENFORCEMENT (4-hour block):

A daily penalty is assessed for CO if the concentration limit established in the *plan approval* (50, 100, or 150 ppmv maximum) is exceeded for any 4-hour period. The penalty is based on how much the concentration exceeds the limit. The daily penalty is defined by the sum of these concentration excesses for all 4-hour violation periods in the day. The equation for this is:

$$S_{CO_4} = \sum_{i=1}^n (C_i - C_{CO_4})$$

where: C_i = concentration of CO (ppmv) for the i th, 4-hour violation period
 C_{CO_4} = concentration limit (ppmv) established in *plan approval*; \leq

The S_{CO4} defines the base penalty as follows:

S_{CO4}	4-Hour Base Penalty (B_{CO4})
1 - 100	\$100
101 - 200	\$200
201 - 300	\$400
> 300	\$800

The daily penalty for CO violations is the base penalty multiplied by the penalty factor:

$$P_{CO} = F B_{CO4}$$

ENFORCEMENT (24-hour daily):

A daily penalty is assessed for CO if the concentration limit established in the *plan approval* (100 ppmv maximum) is exceeded for a 24-hour daily period. The penalty is based on how much the concentration exceeds the limit. The equation for this is:

$$S_{CO24} = C - C_{CO24}$$

where: C = concentration of CO (ppmv) for violation day
 C_{CO24} = concentration limit (ppmv) established in plan approval;
 ≤ 100

The S_{CO24} defines the base penalty as follows:

S_{CO24}	24-Hour Base Penalty (B_{CO24})
1 - 40	\$100
41 - 80	\$200
81 - 120	\$400
> 120	\$800

The daily penalty for CO violations is the base penalty multiplied by the penalty factor:

$$P_{CO} = F B_{CO24}$$

APRIL 1991

MINOR REVISIONS TO

July 1989

AIR QUALITY COMPLIANCE ASSURANCE POLICY FOR MUNICIPAL WASTE INCINERATORS

Approved by: (original signed by James K. Hambricht on 04/12/91)
Director, Bureau of Air Quality Control Date

REVISION 1

Section I.A. The third paragraph on page 3 becomes¹:

"This policy will be reviewed annually for possible revision beginning in October of each year. [one year after the first MWI for which this policy applies has begun firing waste.]"

REVISION 2

Section IV.D.3. The following is added above the second "SURVEILLANCE:" heading on page 28¹:

**"PERMIT:
Before waste can be fired in the incinerator, the source owner must demonstrate to the Department that the telephone dial-up telemetry system complies with all protocols in Appendix F."**

REVISION 3

Section IV.B.5. The first and second paragraphs on page 30 become¹:

"Results of particulate matter tests are to be reported to the Bureau within 15 days from the test day. A full report for all pollutants is due within 30 days following the test in accordance with requirements in the Submittal and Approval section of the Department's Source Testing Manual. **Providing emission compliance has been previously demonstrated, these 15 day and 30 day limits may be extended to 30 and 60 days respectively for subsequent testing.**

If either the 15 day or the 30 day deadline **(or 30 day and 60 day respectively when applicable for subsequent testing)** is not met or [it] **the test** is not an acceptable test, waste charging must cease and penalties will be assessed. See the enforcement response flow charts for more details."

¹Deletions are in [brackets] and added words are underlined in bold.

PENNSYLVANIA

DEPARTMENT

OF

ENVIRONMENTAL RESOURCES

(currently Environmental Protection)

This facsimile of the original policy contains slight modifications for Internet use. For example, since some margins were changed, words and sentences may appear on lines different from those in the original document. Because the original policy is in wide spread circulation and use, care has been taken to replicate the original document both to be able to refer to this facsimile similarly and to avoid the mistaken impression that this facsimile represents a revision of the policy. Editorial updates like this note appear in italics within parenthesis. Hard copies of the original signed policy may be obtained by contacting the Bureau of Air Quality.

**AIR QUALITY
COMPLIANCE ASSURANCE POLICY
FOR
MUNICIPAL WASTE INCINERATORS**

Bureau of Air Quality Control
(currently Air Quality)

July 1989

Approved by: (original signed by James K. Hambright on 07/12/89
Director, Bureau of Air Quality Control Date
(currently Air Quality)

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I. INTRODUCTION

The Department of Environmental Resources is committed to assuring that compliance with air quality requirements is achieved and maintained by municipal waste incinerators.

This document is the Department of Environmental Resource's (Department's) strategy and policy to achieve this compliance effectively and uniformly for new incinerators. It addresses compliance with requirements in the "Best Available Technology and Chapter 127 Plan Approval Criteria for Municipal Waste Incineration Resource Recovery Facilities" document, November 9, 1987, as subsequently revised.

The purposes in formalizing this policy are to explain to the public how we intend to enforce the requirements and to communicate to incinerator operators what can be expected if requirements are violated.

Note: Phrases throughout the document which are in the **EXPLANATION OF TERMS** section appear in *italics*.

I.A. Background

This policy has been developed over three years by a committee established by the Department. The committee is composed of the Bureau of Air Quality Control's central and regional office staff with representation from the Department's Citizens Advisory Council, the Bureau of Waste Management and the Office of Chief Counsel.

The Department solicited comments from the public and industry by circulated drafts of the document in August of 1988. Comments were received from twelve parties. The Department prepared a document summarizing the comment issues and the Department's response which is available from the Bureau of Air Quality Control. As a result of the comment process, some changes have been made to the policy.

This policy will be reviewed for possible revision one year after the first MWI for which this policy applies has begun firing waste.

I.B. Applicability and Scope

This policy applies to municipal waste incinerators covered by requirements of the document, "Best Available Technology and Chapter 127 Plan Approval Criteria for Municipal Waste Incineration Resource Recovery Facilities," September 16, 1986 and as subsequently revised (hereafter referred to as "BAT/Chapter 127").

Requirements expressed in the BAT/Chapter 127 document are **minimum requirements**. Actual requirements are established for a particular

incinerator¹ in the permitting process based on best available technology at the time. This policy does not limit the Department's enforcement response to a particular violation but specifies basic responses to most probable violations.

I.C. Compliance Strategy Summary

The three major elements in the overall compliance strategy are permitting, surveillance, and enforcement.

In the permitting process the specific requirements are identified. The proposed air quality control equipment must be approved during this process. Legally binding permits, which include many restrictions and conditions, must be in place prior to construction of the incinerator and through the entire operating life of the incinerator.

Surveillance to determine compliance with all air quality requirements will be accomplished with:

- * on site inspections;
- * periodic sampling and analysis of stack emissions; and
- * continuously operated, stack emission and parameter monitoring systems.

If a violation is detected at the incinerator during surveillance, an enforcement action is appropriate. The actual enforcement response depends on the intensity and duration of the violation and the effect of the pollutant on the public health and welfare. Enforcement responses in this policy are designed to be corrective and to prevent future occurrences. Responses range from warnings to immediate cessation of waste charging until corrective action has been accomplished.

The Department will assess penalties for all stack emission violations.

Waste charging must automatically cease if any of the following conditions exist for more than fifteen consecutive minutes:

- * combustion temperature is below 1600⁰F;
- * combustion efficiency is below 99.5%;
- * opacity (smoke density) exceeds 10%; or
- * stack gases contain less than 3% oxygen.

These parameters are measured continuously by monitors in the exhaust. By promptly stopping waste charging, these combustion parameters are allowed

¹This is required by Chapter 127.1.(5): "such new sources shall control the emission of air pollutants to the maximum extent, consistent with the best available technology". Chapter 127.12.(5) further states that a source must show "...that emissions from a new source will be the minimum attainable through the use of the best available technology."

to return to proper and safe ranges while firing auxiliary fuel if necessary. These automatic mechanisms are designed to eliminate conditions that could lead to the formation of dioxins.

Additionally, if data is invalid from temperature or carbon monoxide monitors for more than 15 consecutive minutes, waste charging must also cease since compliance cannot be demonstrated.

If any of the following conditions exist, the waste charging system is to be shutdown until the Department authorizes resumed waste firing:

- * stack emission tests indicate that particulate, toxic metal or dioxin emissions exceed allowed levels;
- * results of stack emission tests for particulates, toxic metals, or dioxins are not submitted within the required times; or
- * stack emission test reports do not indicate an *acceptable* test for particulates, toxic metals, or dioxins.

Stack emission sampling tests are required to be conducted periodically for these particulates, toxic metals, and dioxins.

During Department required waste charging shutdowns, the boiler portion of the incinerator may operate only on auxiliary fuel. This could allow the operator to meet a commitment to provide steam during a waste charging cessation period.

II. PERMITTING PROCESS

The permitting process assures that adequate air contaminant control systems are proposed, installed and operated on the incinerator. The regulatory basis for the permitting process is contained in Chapter 127 of Departments Rules and Regulations.

II.A. Plan Approvals

Department approval is required for construction or major modification of any incinerator. The *plan approval* application form is the vehicle for requesting approval. The *plan approval* is the legally binding document containing any limitations on, or conditions of, design, construction, or operation of the incinerator.

The *plan approval* can only be issued if the Department is satisfied that the incinerator will be able to achieve and maintain compliance with all air quality regulations and any additional source specific restrictions deemed appropriate.

Incinerator construction may begin only after a *plan approval* has been granted. The *plan approval* addresses the period up to the first charging of waste in the incinerator. Noncompliance with any *plan approval* condition is a violation of regulations - Chapter 127.25 - and is subject to the full enforcement remedies available under the Air Pollution Control Act¹. These remedies are further described in the **ENFORCEMENT** chapter.

II.B. Temporary Operating Permit

A *temporary operating permit* must be obtained before any waste can be fired. The *temporary operating permit* allows limited operation for testing, shakedown, and Department evaluation of compliance with the conditions and limitations of the *plan approval*.

The *temporary operating permit* refers to the *plan approval* which contains the BAT/Chapter 127 requirements along with any additional operating restrictions which are deemed necessary. Like the *plan approval*, the *temporary operating permit* is a legally binding document and a violation of this permit will result in an appropriate enforcement response.

II.C. Operating Permit

¹Air Pollution Control Act. 1960, Jan. 8, P.L.(1959) 2119, §1., as amended. See Section 4.1 - **Powers and Duties of the Department of Environmental Resources**; and Section 9 - **Penalties**.

An *operating permit* must be obtained for routine waste charging. Compliance with all air quality requirements must be demonstrated and continued compliance must be likely before the permit can be issued.

As with the *plan approval*, the *operating permit* contains the specific source requirements and it is a legally binding document.

II.D. Certification of Continuous Source Monitors

The BAT/Chapter 127 requires that temperature, O₂, CO, CO₂, HCl, SO₂, NO_x, and opacity be monitored continuously. These continuous monitoring systems represent the backbone of the surveillant program.

The BAT/Chapter 127 also requires that the continuous monitoring be conducted in accordance with Chapter 139 requirements. Chapter 139 requirements subject all monitors to a three phase certification process:

Phase 1: initial application where, for example, the monitor location must be approved;

Phase 2: performance testing which compares monitor results with stack test results, etc.; and,

Phase 3: Department review of performance test results and final approval of the system which constitutes "certification."

Once the monitoring system is certified, the data can be used for enforcement.

All monitors are subject to minimum data availability requirements. These are specified in the **ENFORCEMENT** section below along with penalties for noncompliance.

III. SURVEILLANCE

Surveillant functions provide information on the compliance status of the incinerator. Five major sources of this information are inspections, stack tests, *continuous emission monitoring systems (CEMS)*, CEMS audits, and emission data *telemetry systems*. Should a violation be detected during surveillance, appropriate enforcement responses are specified in the **ENFORCEMENT** chapter.

Secondary sources for compliance status information are the public, the host municipality and the source owner.

III.A. Inspections

Extensive routine inspections are conducted four times a year. These take up to two days and involve checking compliance with all air quality regulations, permit conditions and other specific BAT requirements. Follow-up inspections are often required when the Department finds a violation for which corrective action is necessary.

A related surveillant tool is the complaint investigation. The Department responds to all complaints. Response involves communication with the complainant and investigation of the suspected source. Complaints also may involve follow-up investigations or inspections

The inspection is the surveillant method to determine compliance with the following operating requirements (the BAT/Chapter 127 section is in parentheses):

- * inappropriate refuse items like large appliances or sofas (B.2.), and
- * tipping area, negative air, waste storage, and ash handling restrictions (B.3.).

III.B. Stack Tests

The stack test is the surveillant method to determine compliance with the following requirements (the BAT/Chapter 127 section is in parentheses):

- * particulate emissions (A.1.),
- * dioxins emissions (A.5.), and
- * toxic metals ambient concentrations (C.).

III.C. Continuous Source Monitoring

Continuous emission monitoring systems (CEMS) are the surveillant tools to determine compliance with the following requirements (the BAT/Chapter 127 section is in parentheses):

- * emission limitations:
 - hydrochloric acid [HCl] (A.2),
 - sulfur dioxide [SO₂] (A.2),
 - carbon monoxide [CO] (A.3),
 - combustion efficiency [C.E.] (A.4),
 - nitrogen oxides [NO_x] expressed as NO₂ (A.6),
 - visible air contaminants [opacity] (A.7), and

- * operating requirements:
 - 1800⁰ F furnace temperature requirement (B.1), and
 - all waste charging interlock systems (B.5.a.b.c. and d).

The incinerator owner must submit a quarterly report to demonstrate compliance with each of these requirements. Emission or data availability noncompliance incidents in these reports are subject to the enforcement responses contained in the **ENFORCEMENT** section.

III.D. Continuous Source Monitor Audits

The Department conducts a four level audit program to insure that all monitors continue generating reliable data. This audit program is part of the Chapter 139 requirements:

- Level 1: Quarterly excess emissions report review - includes determinations of excess invalid data time;

- Level 2: Field systems inspection - includes maintenance and emission records reviews;

- Level 3: Field analyzer performance audit - includes testing monitors with calibration devices; and

- Level 4: System performance audit - a series of stack tests to verify the relative accuracy of the entire system.

III.E. Telemetry Systems

This surveillant system allows for remotely accessing current emission data and other status information on the incinerator at any time using a personal computer modem. Emission and status data are to be available for every minute in the previous four months at all times.

The source operator may also report problems using this *telemetry system*.

III.F. Schedule

The surveillant schedule for new incinerators is indicated in the following table:

INCINERATOR SURVEILLANCE SCHEDULE

SURVEILLANT FUNCTION	CONSTR- UCTION	INITIAL OPERA- TION ³	SUBSEQUENT OPERATION				Yearly Sum
			Three month periods:				
			1st	2nd	3rd	4th	
Routine Inspections	1	2	1	1	1	1	4
Follow-up Inspections	-	(as required)	-	-	-	-	-
Stack Tests		1		1		1	2
CEMS Certification Tests ¹		1	-	(as required)		-	-
CEMS Level 1 Audits ^{1,2}		1	1	1	1	1	4
CEMS Level 2 Audits ¹			1		1		2
CEMS Level 3 Audits ¹				1			1
CEMS Level 4 Audits ¹						1	1
Complaint Investigations	-	(as required)	-	-	-	-	-
Follow-up Investigations	-	(as required)	-	-	-	-	-
Telemeter Data ²		26	13	13	13	13	52
Data Telemetry Tests ²	1	2	1	1	1	1	4
ON SITE FUNCTION TOTALS:	1	4	2	3	2	3	10
OFF SITE FUNCTION TOTALS:	1	29	15	15	15	15	60
ALL FUNCTIONS:	2	33	17	18	17	18	70

¹ conducted for each of the 7 CEMS

² conducted from office

³ from first waste burning to the first compliance stack test (180 day maximum was assumed)

IV. ENFORCEMENT

If noncompliance is determined from surveillance, an enforcement action is appropriate. The enforcement action in response to noncompliance may involve: warnings; penalties; *abatement plans*; negotiated corrective actions with schedules; or cessation of the waste charging system. Enforcement vehicles may be: *notice of violation letters, citations, letter agreements, consent order and agreements, permit revocations, or Department orders.*

IV.A. General

IV.A.1. Authorization

The Air Pollution Control Act¹(Act) authorizes remedies for violations of the Act. A violation of a regulation is a violation of the Act as per SECTION 8., **Unlawful Conduct.**

A violation of a permit condition is a violation of the regulations as indicated in Chapter 127.25. All BAT/Chapter 127 requirements and any other necessary requirements are contained as permit conditions in the *plan approval, temporary operating permit, or operating permit.* Therefore, a violation of a BAT/Chapter 127 requirement set forth in a permit condition is unlawful conduct under the Act and subject to remedies provided by the Act.

Remedies used in this policy are authorized by sections in the Act:

- * SECTION 4. **Powers and Duties of the Department of Environmental Resources** - for example, orders like shutting down of the incinerator
- * SECTION 6. **Permits** - for example, *permit revocation*, and
- * SECTION 9. **Penalties** - for example, monetary penalties.

The Municipal Waste Planning, Recycling and Waste Reduction Act (1987, 53 P.S. §4000.1704[c]) provides for penalties which can be assessed in addition to those under the Air Pollution Control Act.

IV.A.2. Penalties

For most noncompliant situations, penalties are assessed. Penalty assessments prescribed in this policy are assessed according to:

- * pollutant or parameter,
- * duration and intensity of the violation, and
- * size of the incinerator.

¹Air Pollution Control Act. 1960, Jan. 8, P.L.(1959) 2119, §1., as amended.

The larger the incinerator capacity, the greater the penalty will be for a violation. Base penalties are multiplied by penalty factors for size to determine the total penalty. Penalty factors are defined by:

<u>Incinerator Rated Capacity</u> (tons/day)	<u>Penalty Factor, F</u>
<= 250	1
251 - 750	2
751 - 1500	3
> 1500	4

For multiple incinerators with stack or facility based penalties, the penalty factor is determined from the above table by the sum of the rated capacities of all contributing incinerators. Such penalty factors may be associated with violations of opacity limits or ambient concentration limits for toxic metals and dioxins.

Penalty tables or equations are established for all emission violations. Differing base penalties reflect the air quality consequence of violating the particular standard.

Emission penalties in tables apply to violations detected by continuous source monitoring systems. Table penalties increase with the magnitude of the exceedances. The statutory limit of \$2,500 per day per violated permit condition per incinerator is applied to each CEMS detected emission violation.

Emission penalties in equations apply to violations indicated by stack tests results. These equations apply to particulate matter, dioxins, and toxic metals. For the largest incinerators (penalty factor 4), these penalties approach the statutory limits of \$10,000 for the first day and \$2,500 for subsequent days.

Continuous monitoring quarterly reports are required to be submitted to the Department within thirty days from the end of each calendar quarter. Any such reports not submitted in the required format are returned to the incinerator operator for correction. Quarterly reports submitted beyond the 30-day requirement are subject to delinquency penalties.

The penalty provisions are designed to encourage compliance but not to sanction chronic problems by the simple payment of a penalty. The Department may require corrective action: (1) if emission violations indicate inadequate design or improper operation of a process or air pollution control equipment, or (2) if data availability violations indicate inadequate design or operation of continuous emission monitoring equipment. Where penalty tables apply in this policy, more than one day of maximum emission penalty per quarter warrants consideration for corrective action. For data availability penalties, consideration for corrective action is warranted if the quarterly penalty is the maximum value.

Limited data availability penalty adjustments are possible. Details for penalty adjustments appear in Appendix A.

Penalties will be settled through *Letter Agreements* and *consent order and agreements*. *Letter Agreements* will be used when only penalties are indicated. *Consent order and agreements* will be used when hardware or significant operational changes are also required. Depending on the violation, the

consent order and agreement may not allow any incinerator operation until certain changes are made or it may authorized some operation. Operation under a *consent order and agreement* will be limited to a maximum of 12 months.

IV.B. Specific Responses to BAT/Chapter 127 Issues

This section addresses the enforcement implications of the BAT/Chapter 127 document. Sections of the BAT/Chapter 127 with clear permit, surveillance, or enforcement implications are copied in **bold** followed by Department responses or clarifications under PERMIT, SURVEILLANCE, or ENFORCEMENT. The Department reserves the right to require improved control of air contaminants in addition to enforcement actions indicated here for chronic exceedance cases.

Note that settlement of a violation under prescriptions of this policy does not prevent the Department from taking additional enforcement action for the same event. For example, should penalties be paid for a visible emissions violation which also causes soiling off the facility property, the Department could take additional enforcement actions.

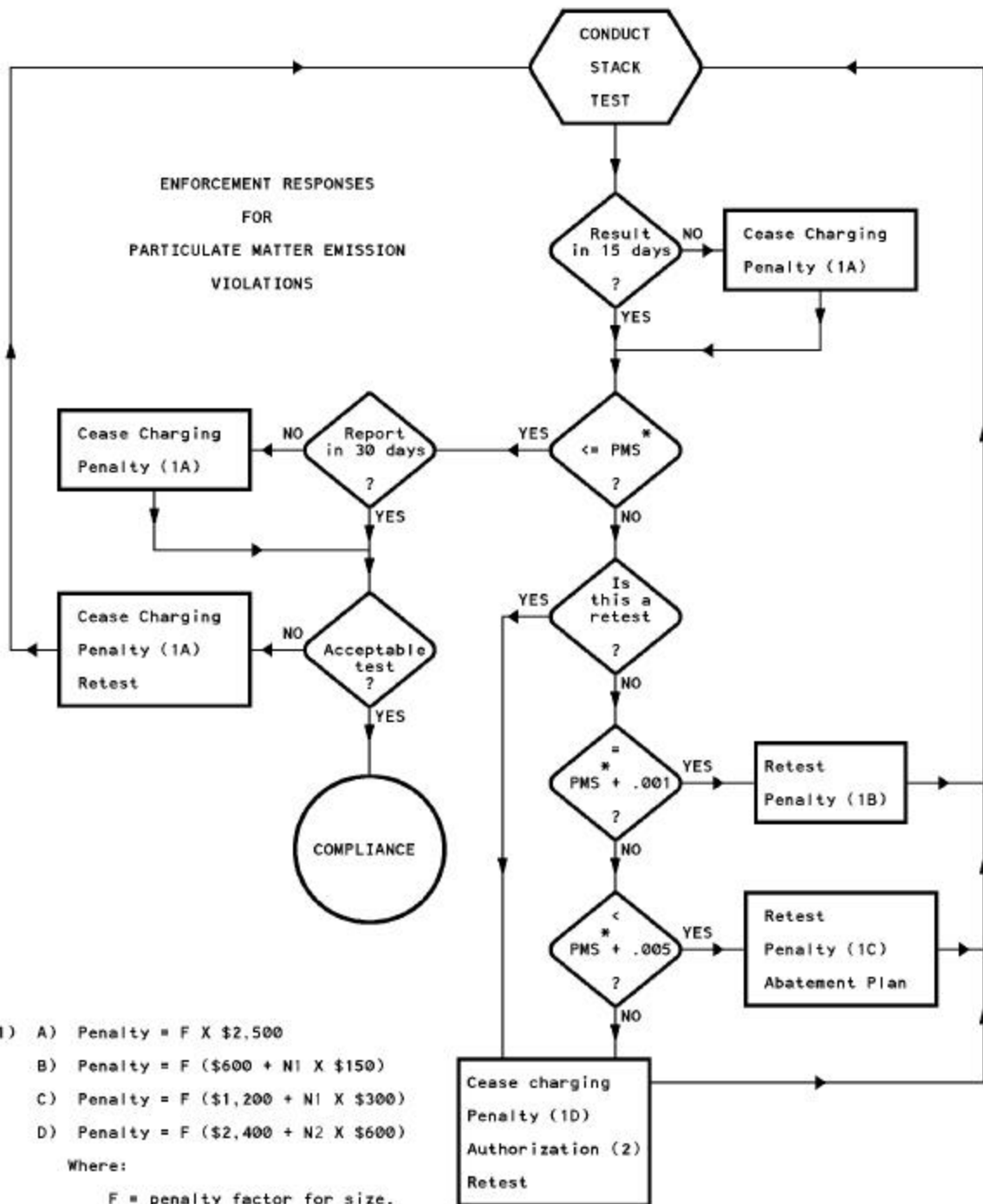
IV.B.1. BAT/Chapter 127, A: Stack Emission Limitations

- A.1. Particulate matter emissions shall not exceed 0.015 grains per dry standard cubic foot (corrected to 7% O₂). Provisions must be made to reduce dew point cycling and the resulting damage to the particulate control device.**

ENFORCEMENT:

The enforcement responses for particulate matter violations are contained in the flow chart below. Responses range from penalties to cessation of waste charging.

When any retest is required, additional enforcement actions are possible if circumstances warrant.



- (1) A) Penalty = F X \$2,500
 B) Penalty = F (\$600 + N1 X \$150)
 C) Penalty = F (\$1,200 + N1 X \$300)
 D) Penalty = F (\$2,400 + N2 X \$600)

Where:

F = penalty factor for size.

N1 = number of waste firing days between test and retest.

N2 = number of waste firing days between test and cessation.

- (2) "Written Department Authorization" is required before waste firing can be renewed.

* PMS the is Particulate Matter Standard. If a particulate limit on sizes less than 10 microns (PM10) is also established in the Plan Approval, this also applies using the PM10 limit as the PMS. These enforcement responses apply to both standards independently.

A.2. Hydrochloric acid (HCl) emissions shall not exceed 30 ppmv, hourly average, corrected to 7% O₂ on a dry basis; or, be reduced 90% (by weight) on an hourly average.

ENFORCEMENT:

A daily penalty is assessed for HCl if the concentration limit established in the *plan approval* (30 ppmv maximum) is exceeded **and** the required reduction established in the *plan approval* (minimum 90%) is not achieved for any hour. The penalty is based on how much the concentration exceeded the limit and how much less than the required reduction was achieved. The product of these two factors is summed for every violation hour in the day. The daily penalty is defined by this sum. The equation for this is:

$$S_{HCl} = \sum_{i=1}^n (C_i - C_{HCl})(R_{HCl} - R_i)$$

where: C_i = concentration of HCl (ppmv) for ith violation hour

C_{HCl} = concentration limit (ppmv) established in *plan approval*; ≤ 30

R_{HCl} = reduction requirement (%) established in *plan approval*; ≥ 90

R_i = reduction percentage achieved for the ith violation hour

n = number of violation hours in the day

The S_{HCl} defines the base penalty as follows:

S _{HCl}	Base Penalty (B _H)
1 - 1500	\$100
1501 - 3000	\$200
3001 - 4500	\$400
> 4500	\$800

The daily penalty for HCl violations is the base penalty multiplied by the penalty factor:

$$P_H = F B_H$$

A.2. Sulfur dioxide (SO₂) emissions shall not exceed 30 ppmv, hourly average, corrected to 7% O₂ on a dry basis; or, be reduced 75% (by weight) on an eight-hour running average.

ENFORCEMENT:

A daily penalty is assessed for SO₂ if the concentration limit established in the *plan approval* (30 ppmv maximum) is exceeded **and** the required reduction established in the *plan approval* (minimum 75%) is not achieved

for an 8-hour period. The penalty will be based on how much the concentration exceeded the limit and how much less than the required reduction was achieved. The product of these two factors is summed for every 8-hour violation period in the day. The daily penalty is defined by this sum. The equation for this is:

$$S_{SO_2} = \sum_{i=1}^n (C_i - C_{SO_2})(R_{SO_2} - R_i)$$

where: C_i = concentration of SO₂ (ppmv) for the i^{th} , 8-hour violation period
 C_{SO_2} = concentration limit (ppmv) established in *plan approval*; ≤ 30
 R_{SO_2} = reduction requirement (%) established in *plan approval*; ≥ 75
 n = number of 8-hour violation periods in the day
 R_i = reduction percentage achieved for the i^{th} , 8-hour violation period

The S_{SO_2} defines the base penalty as follows:

S_{SO_2}	Base Penalty (B_s)
1 - 800	\$100
801 - 1600	\$200
1601 - 2400	\$400
> 2400	\$800

The daily penalty for SO₂ violations is the base penalty multiplied by the penalty factor:

$$P_s = F B_s$$

A.3. Carbon monoxide (CO) emissions, as measured at a location upstream of the control devices, shall not exceed: 100 ppmv as an eight-hour running average; and, 400 ppmv as an hourly average. These concentrations are to be corrected to 7% O₂ on a dry basis.

ENFORCEMENT:

A daily penalty is assessed for CO if the concentration limit established in the *plan approval* (100 ppmv maximum) is exceeded for any 8-hour period. The penalty is based on how much the concentration exceeds the limit. The daily penalty is defined by the sum of these concentration excesses for all 8-hour violation periods in the day. The equation for this is:

$$S_{CO} = \sum_{i=1}^n (C_i - C_{CO})$$

where: C_i = concentration of CO (ppmv) for the i^{th} , 8-hour violation period

C_{CO8} = concentration limit (ppmv)
 established in *plan approval*; ≤ 100
 n = number of 8-hour violation periods
 in the day

The S_{CO8} defines the base penalty as follows:

S_{CO8}	8-Hour Base Penalty (B_{8h})
1 - 300	\$100
301 - 600	\$200
601 - 900	\$400
> 900	\$800

An additional daily penalty is assessed if the concentration limit established in the *plan approval* (400 ppmv maximum) is exceeded for any hours. The penalty is based on how much the concentration exceeds the limit. The daily penalty is defined by the sum of these concentration excesses for all violation hours in the day. The equation for this is:

$$S_{CO1} = \sum_{i=1}^n (C_i - C_{CO1})$$

where: C_i = concentration of CO (ppmv) for violation hour i
 C_{CO1} = concentration limit (ppmv)
 established in *plan approval*; ≤ 400
 n = number of violation hours in the day

The S_{CO1} defines the base penalty as follows:

S_{CO1}	Hourly Base Penalty (B_h)
1 - 1000	\$100
1001 - 2000	\$200
2001 - 3000	\$400
> 3000	\$800

The total daily CO penalty is the sum of the base penalties multiplied by the penalty factor:

$$P = F (B_{8h} + B_h)$$

A.4. Combustion efficiency (C.E.) shall be at least 99.9 percent as an eight-hour running average, computed as follows:

$$\text{C.E.} = \frac{\text{C}_{\text{CO}_2}}{\text{C}_{\text{CO}_2} + \text{C}_{\text{CO}}} \times 100\%$$

C_{CO_2} = concentration of carbon dioxide
 C_{CO} = concentration of carbon monoxide

ENFORCEMENT:

If the combustion efficiency drops below 99.9% for any 8-hour period, there is a penalty of \$500 multiplied by the penalty factor for that day:

$$P_E = \$500 F$$

Note that when the combustion efficiency is below 99.5% for 15 or more minutes, waste charging must cease (see **Operating Requirement 5.**)

- A.5. Polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) emissions expressed as 2,3,7,8 tetrachlorinated dibenzo-p-dioxins (TCDD) equivalents using toxicity equivalents factors (TEFs) described in Appendix A, shall not exceed 2 ng/Nm³, corrected to 7% O₂ on a dry basis.**

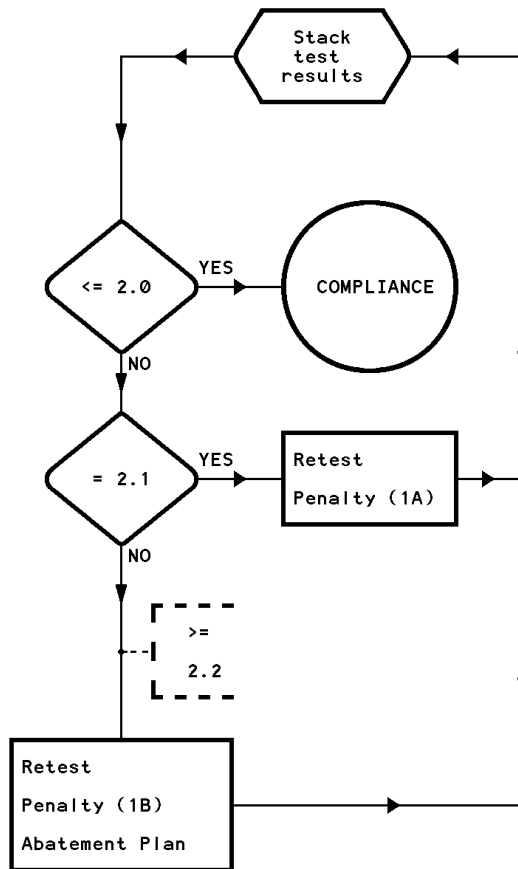
ENFORCEMENT:

Enforcement responses for dioxin violations are contained in the flow chart below. Responses involve penalties, retests and abatement plans.

Note that waste charging cessation criterion for dioxin emissions is more appropriately based on violations of ground level concentration limits in the **Ambient Impact Analysis**, page 24.

When any retest is required, additional enforcement actions are possible if circumstances warrant.

ENFORCEMENT RESPONSES
FOR
DIOXIN EMISSION
VIOLATIONS



(1) A) $Penalty = F (\$1,200 + N \times \$300)$

B) $Penalty = F (\$2,400 + N \times \$600)$

Where:

F = penalty factor for size.

N = number of waste firing days between test and retest.

A.6. Nitrogen oxide (NO_x) emissions, expressed as NO₂, shall not exceed 300 ppmv, daily average, corrected to 7% O₂ on a dry basis.

ENFORCEMENT:

If the concentration limit established in the *plan approval* (300 ppmv maximum) is exceeded, a daily penalty is assessed based on the violation concentration:

C _{NOx}	Base Penalty (B _N)
301 - 320	\$200
321 - 340	\$400
341 - 360	\$800
> 360	\$1600

The penalty is the base penalty multiplied by the penalty factor:

$$P = F B_N$$

A.7. Visible air contaminants shall not be emitted in such a manner that the opacity of the emissions is equal to or greater than 10% for a period or periods aggregating more than 3 minutes in any one hour; or equal to or greater than 30% at any time.

ENFORCEMENT:

Daily penalties is assessed any time either limit is exceeded. Independent penalties are assessed based on the total daily minutes in excess of the 10% or 30% opacity standards according to the following tables:

<u>10% Std.</u>		<u>30% Std.</u>	
<u>Excess Minutes</u> (T ₁₀)	Base Penalty (B ₁₀)	<u>Excess Minutes</u> (T ₃₀)	Base Penalty (B ₃₀)
1 - 30	\$100	1 - 10	\$100
31 - 60	\$200	11 - 20	\$200
61 - 90	\$400	21 - 30	\$400
> 90	\$800	> 30	\$800

The total daily opacity penalty is the penalty factor for size times the sum of any base penalties:

$$P_o = F (B_{10} + B_{30})$$

Note that when the opacity is => 10% for more than 15 or more minutes, waste charging must cease (see **Operating Requirement 5.**)

IV.B.2. BAT/Chapter 127, B: Operating Requirements

B.1. The unit shall maintain the combustion gases at a temperature greater than 1800°F for at least one second. The unit shall be equipped with automatically controlled auxiliary fuel burners to maintain the combustion gases at the aforementioned conditions under all waste firing conditions; and, to insure that the furnace will reach 1800°F prior to the introduction of waste.

PERMIT:

The one second residence time requirement is principally controlled by the incinerator design. *Plan approvals* will only be granted for incinerators where a one second residence time is clearly indicated from assessments of the design parameters.

SURVEILLANCE:

The auxiliary fuel burning system is to be checked for compliance in the following ways:

1. Auxiliary fuel alone is to be fired for all cold start-ups until the temperature is maintained => 1800°F for 15 minutes; and
2. At least once every 6 months the 1800°F is to be demonstrated on auxiliary fuel alone. During this demonstration the temperature must be => 1800°F for at least 15 minutes with no waste in the combustion zone. (A cold start-up during the 6 month period as in 1 above will suffice for this demonstration.)

ENFORCEMENT:

Should the incinerator fail to achieve and maintain the 1800°F during either of the above two demonstrations, no waste may be fired until the 1800°F demonstration is successful.

In addition, the total time when the temperature is below 1800°F during waste firing is subject to penalty according to the following:

<u>Daily Minutes</u> <u>< 1800⁰ F</u> (T _T)	<u>Base</u> <u>Penalty</u> (B _T)
1 - 30	\$200
31 - 60	\$400
61 - 90	\$800
> 90	\$1600

The total daily penalty for these low temperature violations is the penalty factor for size times the base penalty:

$$P_T = F B_T$$

Note that when the temperature is below 1600°F for 15 or more minutes, waste charging must cease (see **Operating Requirement 5.**)

- B.2. Large, bulky noncombustible (e.g., water heaters, refrigerators) and difficult to burn, bulky combustible materials (e.g., mattresses, sofas) shall be excluded from the refuse charged to the furnace.
- B.3. The tipping area shall be totally enclosed and operated at a negative pressure to prevent the escape of malodors. The air shall be used as primary combustion air in the incinerator. Open storage of municipal waste and ash are prohibited. Ash shall be loaded in an enclosed area or handled wet in enclosed containers.

PERMIT:

Issuance of an *operating permit* will be conditional on the proper operation of the tipping area negative air system in preventing the escape of malodors.

SURVEILLANCE:

Observations during inspections will determine compliance with these restrictions.

ENFORCEMENT:

Responses to violations will be case-by-case and will depend on the actual conditions of the violation.

- B.4. In addition to an inspection and maintenance plan, the owner or operator shall prepare a plan of action. The plan of action shall identify the steps and procedures the operator will follow to avoid exceedances of the emission limitations and operating conditions specified in paragraphs A.2, A.3., A.4., and B.1. The plan shall include descriptions of start-up and shutdown procedures; actions to be taken to correct anomalous operating conditions and training of plant operators.

PERMIT:

The plan of action must be acceptable to the Department before a *temporary operating permit* will be issued.

Before an *operating permit* can be issued, the plan of action will be reviewed and possibly changed for continued acceptability.

SURVEILLANCE:

The performance of the operator will be checked with that indicated in their plan of action.

ENFORCEMENT:

Appropriate enforcement responses will follow negligent actions or inactions by the operator.

- B.5. The charging of waste to the incinerator shall automatically cease through the use of interlock system if:
- a. The incinerator temperature drops below 1600⁰F for a 15 minute period, or
 - b. The combustion efficiency drops below 99.5% for a 15 minute period, or
 - c. The flue gas oxygen level drops below 3% (wet basis) for a 15 minute period, or
 - d. The opacity of the visible emissions is equal to or greater than 10% for a period of 15 minutes.

Some deviation from the above temperature and flue gas oxygen limits may be permissible for those units utilizing advanced combustion technologies or burning specially prepared municipal wastes.

PERMIT:

Before any waste can be fired, all mechanisms for cessation of waste charging must be successfully demonstrated to the Department while burning auxiliary fuel.

SURVEILLANCE:

All such systems must be demonstrated to the Department at least every 6 months during a routine inspection.

ENFORCEMENT:

Should any of these mechanisms fail during a test or at any other time, no more waste may be fired until the failed system has been repaired.

Should waste charging be stopped because of any of these conditions, the event shall be reported to the Department in the quarterly report by date, time, and duration.

IV.B.3. BAT/Chapter 127, C: Ambient Impact Analysis

C.

An ambient impact analysis of the facility shall be conducted for: (a) arsenic and compounds; (b) cadmium and compounds; (c) hexavalent chromium and compounds; (d) nickel and compounds; (e) lead and compounds; (f) beryllium and compounds; (g) mercury and compounds; and (i) PCDD and PCDF expressed as 2,3,7,8 TCDD equivalents using TEFs described in Appendix A.

The applicant shall conduct the analysis by performing dispersion modeling using the facility's exhaust characteristics. The analyses shall be conducted in accordance with the "Guidelines on Air Quality Modeling" dated January 1983 (or as revised). The applicant should discuss the modeling requirements with the Department prior to starting any modeling study. The analyses must show that predicted concentrations do not exceed the following annual ambient concentrations. Levels exceeding these concentrations have been determined by the Department to be unacceptable.

Contaminants	Ambient Concentration (mg/m^3)
PCDD & PCDF expressed as 2,3,7,8 TCDD equivalents	0.30×10^{-7}
Arsenic and compounds	0.23×10^{-3}
Beryllium and compounds	0.42×10^{-3}
Cadmium and compounds	0.56×10^{-3}
Nickel and compounds	0.33×10^{-2}
Hexavalent Chromium and compounds	0.83×10^{-4}
Lead and compounds	0.50
Mercury and compounds	0.08

Compliance shall be verified by stack sampling as described in paragraph D below. Conformance with the ambient concentration guidelines shall be demonstrated each time stack sampling is conducted.

BACKGROUND:

Risk emission limits (REL's) for all ambient concentrations limits above are determined using modeling procedures approved in the *plan approval* (consult the above reference for modeling details). Thus the *REL's* are stack emission rates corresponding to the annual ambient concentration limits in the above table. Cease waste charging criteria are based on these *REL's*.

Toxic metal emission limits (TMEL's) for a particular incinerator are established during the permitting process for all contaminants in the table. The *TMEL's* are the lowest emission rates achievable on a consistent basis using the approved, best control technology.

Units of *REL's* and *TMEL's* are grains/dry standard cubic foot (gr/dscf) of exhaust gas corrected to 7% oxygen. *TMEL's* may be significantly less than the *REL's* but never more.

The Department will propose *toxic metal emission limitation guidelines* by December 31, 1989. These proposed *TMEL* guidelines will be based on compatibly derived, performance data from as many new incinerators as are available which employ best available technology. Proposed *TMEL* Guidelines levels will be published in the "Pennsylvania Bulletin" as *BAT* criteria guidelines with a 30 day comment period provided before finalization.

PCDD/PCDF is the only contaminant in the table for which the *BAT/Chapter 127* specifies a **Stack Emission Limitation (in A.5)**. Therefore, there is no need for a *TMEL* equivalent for dioxins. Cease waste charging criteria for dioxins are based on the *REL*.

PERMIT:

In the *plan approval application*, modeling results must indicate compliance with the above ambient limits before the *plan approval* can be issued.

When finalized *TMEL* guidelines are available, they will be used in establishing *TMEL's* in *plan approvals*. In all cases, *TMEL's* will be imposed on new *MWI* facilities prior to the issuance of an operating permit.

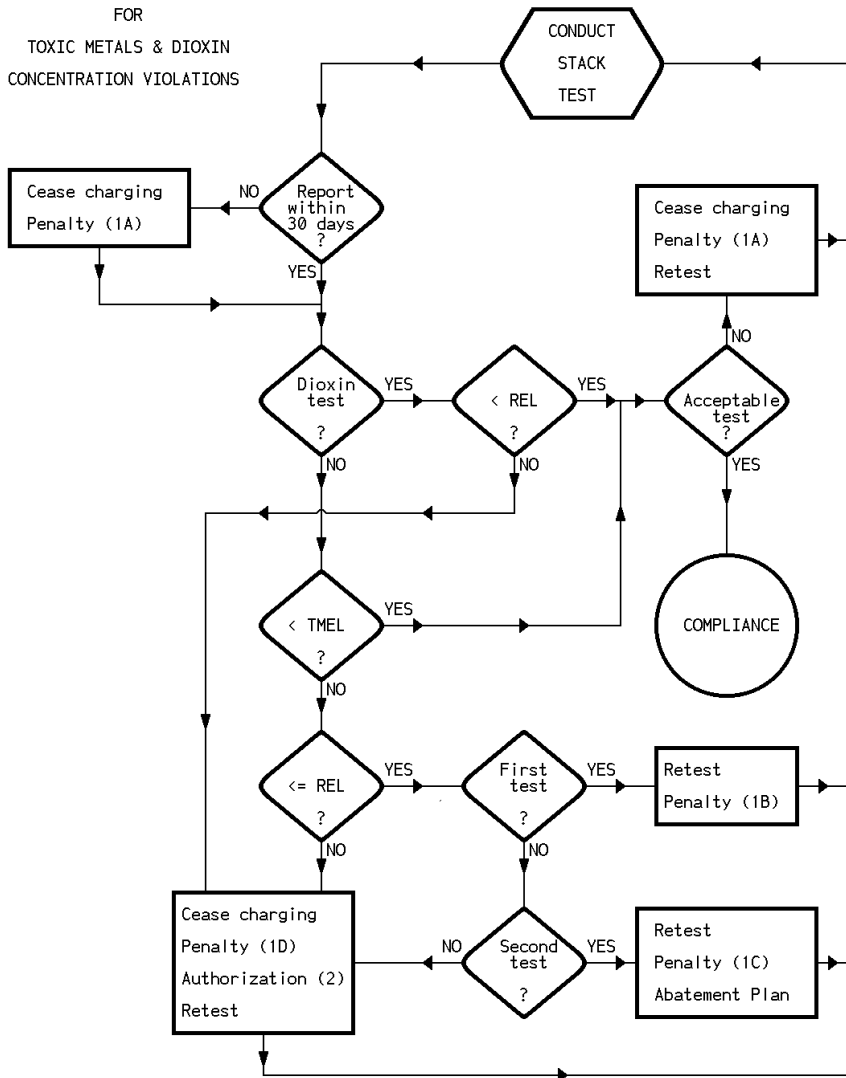
ENFORCEMENT:

Compliance with *REL's* will be determined by averaging the test results conducted during any running 12 month period beginning with results from the first 6-month test. Compliance with *TMEL's* will be determined by each test result.

Enforcement responses for toxic metals and dioxins concentrations violations are contained in the flow chart below. Responses range from penalties to cessation of waste charging.

When any retest is required, additional enforcement actions are possible if circumstances warrant.

ENFORCEMENT RESPONSES
FOR
TOXIC METALS & DIOXIN
CONCENTRATION VIOLATIONS



(1) A) Penalty = F X \$2,500

B) Penalty = F (\$600 + N1 X \$150)

C) Penalty = F (\$1,200 + N1 X \$300)

D) Penalty = F (\$2,400 + N2 X \$600)

Where: F = Penalty factor for size.

N1 = number of waste firing days between test and retest.

N2 = number of waste firing days between test and cessation.

(2) "Written Department Authorization" is required before waste charging can be renewed.

IV.B.4. BAT/Chapter 127, D: Monitoring Requirements

D.1. The unit shall be equipped with instruments for continuously monitoring and recording temperature, O₂, CO, CO₂, HCl, SO₂, NO_x and opacity. The temperature monitoring instrumentation shall be located to demonstrate compliance with B.1. of this criteria. The applicant may monitor the temperature at an alternate location provided the one second residence time requirement will be met through the use of mathematical calculation(s). Verification that the lower temperature at the alternate location corresponds to the required operating temperature of 1,800°F shall be demonstrated during stack testing.

The CO₂, NO_x and O₂ monitors shall be collocated upstream of the air pollution control devices. If the applicant chooses to comply with SO₂ and HCl emission limitations by meeting the percent reduction levels, the O₂, SO₂, and HCl monitors shall be located upstream and downstream from the air cleaning device. Also, if the applicant chooses to monitor the two locations with a single detector, the two locations shall be sampled at an acceptable interval.

PERMIT:

All monitoring locations must be approved in the first phase of the three phase, monitor approval process.

Before waste can be fired in the incinerator, all continuous monitoring systems must be installed and have demonstrated compliance with all applicable performance specifications with the exception of relative accuracy tests.

SURVEILLANCE:

If the required temperature is predicted by calculation using an alternate temperature measurement location, the relationship between the two temperatures locations must be checked by the company every day using a calibration thermocouple. Should temperature verification records at a particular MWI indicate that a lesser schedule is adequate, the Department may authorize appropriate adjustments.

The calibration thermocouple with the readout must be calibrated every 6 months either by the National Institute of Standards and Technology or a laboratory using standards purchased directly from the Institute.

Corrections to the derived temperature readout must be made if the calibration thermocouple readout indicates a temperature difference of more than a 10F°. Any such temperature adjustments are to be reported to the Department by date and adjustment amount in the quarterly report.

All daily temperature adjustment records are to be available for inspection.

D.2. Continuous monitoring shall be conducted in accordance with 25 PA. Code Chapter 139, and be approved by the Department.

PERMIT:

Part of Chapter 139 requires that the three phase certification process be completed for each monitor (outlined in **Certification of Continuous Source Monitors**, page 6). This process assures that all of the remaining Chapter 139 requirements are met.

SURVEILLANCE:

Chapter 139 also requires that the four level audit program be conducted on each monitor to check the continuing validity of the monitoring data (**Continuous Source Monitor Audits**, page 8).

ENFORCEMENT:

Monitoring data determined to be inaccurate or not representative during an audit will be invalidated. Data for the quarter in question will be reevaluated for excess invalid data which is subject to penalty (see **Data Availability** page 30).

- D.3. The owner/operator shall provide the Department with access to all continuous emission/parameter monitoring data via telephone dial-up (modem) and/or other means of transfer as approved by the Department.

SURVEILLANCE:

Companies will be required to maintain data logging equipment that will be accessible to the Department and other authorized agencies via dial-up modems. The Department will specify which data, the data logging format, as well as the log-on, query and log-off procedures (**APPENDIX F**). All data are to be available by modem for the previous four-month time period.

Companies will be required to submit quarterly emission report data on floppy disks for processing by the Department. The Department will specify the data and the format to be used for recording on floppy disks (**APPENDICES B,C,D, & E**).

ENFORCEMENT:

Quarterly continuous monitoring reports submitted in a format not approved by the Department will be returned for resubmittal in the proper format. Improperly submitted quarterly reports are subject to delinquent penalties (see **Quarterly Reports** page 32).

IV.B.5. BAT/Chapter 127, E: Test Requirements

E.2. The owner or operator shall conduct source tests at any time or interval of time as may reasonably be prescribed by the Department. At a minimum, source tests shall be conducted:

- a. For all pollutants specified in E.1 of this criteria except PCDD and PCDF, HCl, SO₂, and NO_x - every six months;
- b. For PCDD and PCDF - every year, and
- c. For HCl, SO₂ and NO_x - as required by the Department for the initial certification and system performance audits of the continuous emission monitors.

As a data base is established and correlated with continuous emissions monitoring, the schedule may be altered.

PERMIT:

Annual and semi annual testing dates will be specified in Temporary Operating Permits and Operating Permits.

ENFORCEMENT:

Delinquent testing is subject to penalty in accordance with the following:

$$P = F \$1000 \times N/7$$

where: N = number of delinquent days

However, if N is less than 15 days, the penalty will be forgiven.

The initial tests are to be conducted within 60 days after achieving the *maximum permitted hourly firing rates*, but no later than 180 days after start-up.

ENFORCEMENT:

A written start-up schedule is to be received by the Department at least 30 days in advance. The schedule should at least contain expected dates for the first *waste firing day* and for initially achieving the maximum permitted *hourly firing rate* for waste. A written statement indicating when these two events actually occurred is also to be sent to the Department.

A pretest plan satisfying the requirements in the Submittal and Approval section of the Department's Source Testing Manual¹ is to be submitted to the Bureau at least 45 days before testing. The Bureau is also to be notified at least two weeks in advance of all stack tests conducted to demonstrate compliance. Dates for testing are to be acceptable to the Department.

¹Pages 3, 4 and 5 of REFERENCE 4.

Emission tests not conducted within the times prescribed by the BAT/Chapter 127 E.2 are subject to the penalty:

$$P = \$500 F N$$

where N = number of days beyond the 60 or 180, whichever applies, until an *acceptable test* is conducted (time required for Department assessment of the test will not be penalized).

Results of particulate matter tests are to be reported to the Bureau within 15 days from the test day. A full report for all pollutants is due within 30 days following the test in accordance with requirements in the Submittal and Approval section of the Department's Source Testing Manual¹

If either the 15 day or the 30 day deadline is not met or it is not an *acceptable test*, waste charging must cease and penalties will be assessed. See the enforcement response flow charts for more details.

IV.C. **Continuous Source Monitoring**

Continuous monitoring is subject to requirements for accuracy, data availability and quarterly report submittals.

IV.C.1. **Data Availability**

Minimum data availability regulations for all continuous monitoring systems are being promulgated. Specific regulations for monitoring systems on municipal waste incinerators will be included. Until regulations are adopted, the requirements for incinerator monitoring systems will be contained in the *plan approvals* or *operating permits*:

	MONITORED POLLUTANT OR PARAMETER SYSTEM (class)		
REQUIREMENT	CO*, CE & Temperature (a)	Opacity (b)	HCl*, SO2*, & NOx* (c)
=====			
Data availability hrs	100% valid hrs	>= 95% valid hrs	>= 90% valid
month	per day	per day	per

¹Pages 3, 4 and 5 of **REFERENCE 4.**

Valid hour		>= 90% valid	>= 75% valid	>= 75%
valid		readings (54 min)	readings (45 min)	readings (45 min)

* corrected to 7% oxygen on a dry basis

Monitoring systems not achieving the required data availability are subject to quarterly penalties. Penalties depend on the system class (a, b, or c); the total number of excess invalid hours in the quarter (N_a , N_b , or N_c); and the penalty factor (F). Penalties are only assessed on outlet monitoring systems for HCl and SO₂.

Quarterly penalties are defined by the following equations:

$$P_a = \$200 \times F \times 2^{(N_a - 1)/72} \quad \text{up to a maximum of \$12,800,}$$

that is, where $N_a \geq 432$ hrs

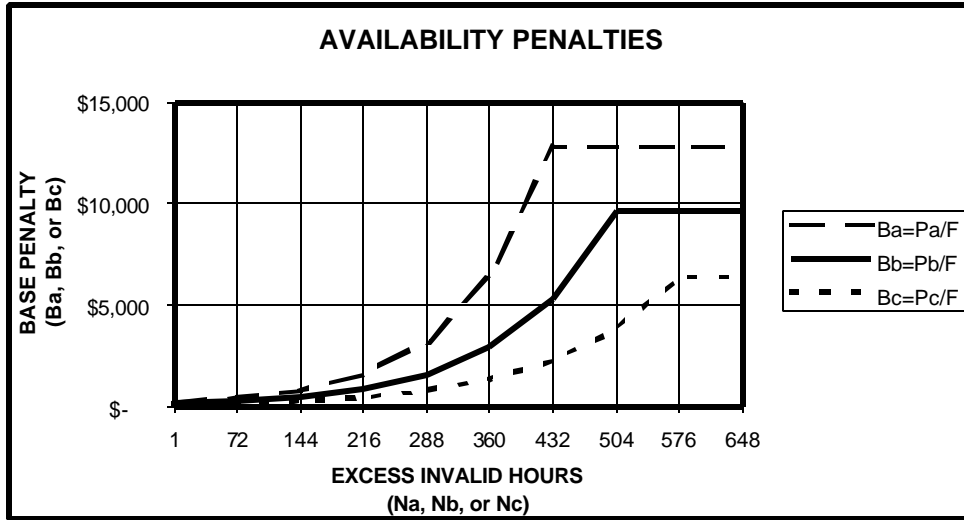
$$P_b = \$150 \times F \times 2^{(N_b - 1)/84} \quad \text{up to a maximum of \$9,600,}$$

that is, where $N_b \geq 504$ hrs

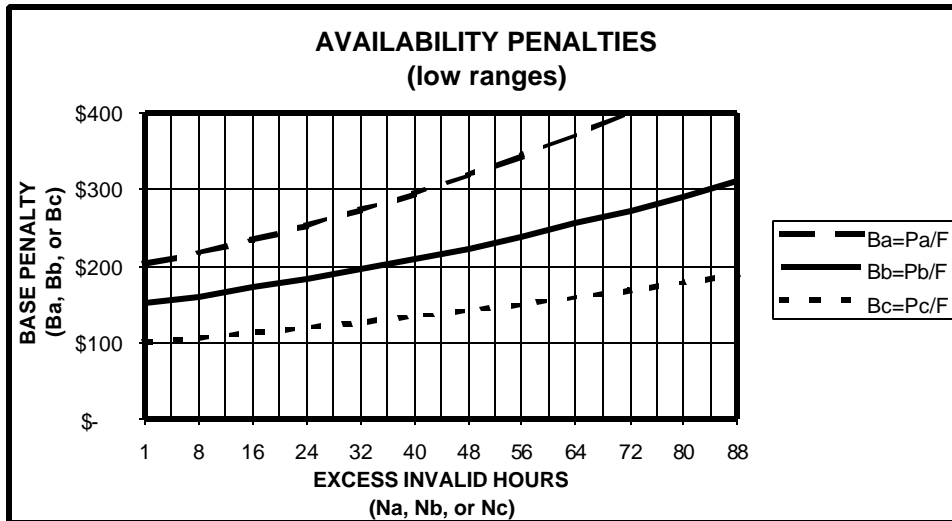
$$P_c = \$100 \times F \times 2^{(N_c - 1)/96} \quad \text{up to a maximum of \$6,400,}$$

that is, where $N_c \geq 576$ hrs

Graphically that is:



The graph below depicts more detail at the low penalty ranges:



IV.C.2. Quarterly Reports

Data from all required continuous monitors shall be submitted quarterly.

IV.C.2.a. Format

Routine emission or parameter reports and incident reports for opacity, low temperature, and cessation of waste charging must be submitted quarterly on both paper and computer floppy disk. The formats are

specified in **APPENDICES B, C, D, and E**. The hardcopy requirement may be waived on a case-by-case basis after two quarterly report submittals.

Reports not conforming to the required formats will be returned to the source for resubmittal in the proper format.

IV.C.2.b. Time Limits

All data reports are to be submitted in duplicate to the Division of Technical Services and Monitoring (*currently Source Testing and Monitoring*) in Harrisburg within 30 days following the end of each quarter as required in the Record Keeping and Reporting sections of the Continuous Source Monitoring Manual¹².

Subsequent data report changes must be submitted in duplicate to the appropriate regional office. The regional office will forward all approved changes to the Division of Technical Services and Monitoring. Data resubmittals must be submitted to the regional office within 60 days following the end of the quarter.

IV.C.2.c. Delinquent Reports

Any data report not submitted in the proper format within the time limits will be considered delinquent.

Delinquent reports will be considered in violation of the reporting requirements specified in the Continuous Source Monitoring Manual¹(pages 34 & 37; B.3) and subject to a penalty of \$100 per day of delinquency per report. However, this penalty will be forgiven for reports delinquent for seven or less days. That is, the penalty if submitted on the eighth day of delinquency would be \$800; on the ninth, \$900; etc.

¹Pages 34 and 37, B.2. and B.3. of **REFERENCE 4**.

V. HOST MUNICIPALITY PARTICIPATION

The Department will interact with the governing body of the municipalities hosting the incinerator in a number of areas relative to compliance with air quality requirements:

- The Department is authorized to provide 50% of employment costs for an inspector designated by the host municipality.
- The Department will provide biannual training to certify up to two local inspectors.
- The host municipality inspector(s) are authorized to enter property, inspect those records required by the Department, take samples and conduct inspections in accordance with Department regulations as applicable to Department inspectors.
- The host municipality will be invited to have their certified inspector(s) accompany Department inspectors during routine inspections.
- Should the host municipality present the Department with information indicating a violation exists, the Department will investigate the case promptly. If the Department has reason to believe the incinerator is in violation, an inspection will be conducted where the local certified inspector will be invited. If the Department does not have reason to believe the incinerator is in violation and that an inspection is not warranted, the municipality will be sent an explanation within 30 days of receiving the municipality's complaint.
- The host municipality will be promptly notified whenever the Department takes any enforcement or emergency action.
- The host municipality will be sent copies of all Department inspection reports, stack tests and quarterly continuous emission monitoring summary reports within 5 days of their availability.
- On request, the host municipality may obtain current telemetered data from continuous monitors where available. These data will be accessible to the Department and other authorized parties on a dial-up basis using a computer modem.

VI. EXPLANATION OF TERMS

Abatement Plan

A written plan with a timetable outlining what will be done to achieve compliance.

Acceptable Test

A stack emission test which is conducted with procedures and protocols acceptable to the Department. This includes proper data collection, calculation and reporting. The report must include all items required by the Department's Source Testing Manual (see **REFERENCES**).

Consent Order and Agreement

A legal Department document used to settle violations when equipment or process changes are required. Penalties are usually included for past violations, future violations and missing scheduled completion dates. The terms are incontestable since they are agreed upon by both parties.

Continuous Emission Monitoring System (CEMS)

This system continuously measures and records a pollutant emission level or temperature data from the incinerator. Incinerators subject to BAT/Chapter 127 are required to continuously monitor temperature, O₂, CO, CO₂, HCl, SO₂, NO_x and opacity. The CEMS consists of a sample acquisition system; sensing device (s) to measure the amount of a pollutant being emitted or the temperature; and a data logging and processing system to convert the data to the proper units and averaging times and store the data. There are requirements that the overall CEMS must produce minimum amounts of valid data - these are the data availability requirements.

Citation

A summary offense filed with a District Magistrate involving only a penalty to settle a past violation (similar to a citation filed for a traffic law violation). The Department recommends the penalty amount to the District Magistrate who establishes the final penalty amount.

Department Order

A legal document in which the Department unilaterally directs that an action be taken, e.g., a cessation of an operation or process. It is usually reserved for violations requiring immediate and drastic action.

Hourly firing rate

The rate in tons of waste per hour charged and burned in the incinerator. The measurements will be determined on a case by case basis. For example, eight full clam buckets per hour may represent a 4 ton/hour firing rate for a particular incinerator.

Letter Agreement

A legal Department document used to settle past violations when only penalties are involved. The terms are incontestable since they are agreed upon by both parties.

Maximum permitted

The maximum which is authorized in the *plan approval*, *temporary operating permit* or the operating permit, e.g., maximum permitted hourly firing rate.

Notice of Violation

A Department notice or letter used to formally communicate the finding of a violation. A notice of violation can also be the first step to other enforcement actions.

Operating Permit

The legal authorization required and granted by the Bureau to operate or maintain any air contamination source with a valid plan approval. The operating permit can only be issued when the Bureau is satisfied that the source has achieved and can maintain compliance with all air quality regulations and all *plan approval* conditions. This permit authorizes operation for one year for incinerators providing inspections and testing continue to indicate compliance. Prior to expiration of the permit, the incinerator is inspected and the operating permit conditions are reviewed and updated as necessary. The permit may then be reissued.

Permit Revocation

The Bureau document which suspends the *temporary operating permit* or *operating permit*. Operation after receiving a permit revocation constitutes grounds for a filing a criminal citation.

Plan Approval

The legal authorization required and granted by the Bureau to construct, modify any air contamination source or to install any air cleaning device. The plan approval can only be issued if the Bureau is satisfied that the source will be able to achieve and maintain compliance with all air quality regulations and any additional source specific restrictions deemed appropriate. For incinerators this approval contains requirements (e.g. the BAT/Chapter 127 requirements) and appropriate source specific conditions for construction. It covers the period up to, but not including, firing the incinerator with waste. The approval has an expiration date although limited extensions are possible. If the conditions of the approval are not met or continuing compliance is not likely, a *temporary operating permit* would not be granted. The plan approval disposition (issuance or denial) is published in the Pennsylvania Bulletin.

Plan Approval Application

This Bureau document is the vehicle for requesting a *plan approval*. Among other things, detailed information must be provided on the process; the proposed control equipment; and the kind and amount of emissions before and after the control equipment. The receipt of a

plan approval application is always published in at least the Pennsylvania Bulletin.

REL (risk emission limit)

REL's are risk management, stack emission levels established for all the ambient concentrations listed in the **Ambient Impact Analysis** section of the BAT/Chapter 127. REL's correspond to a one in a million cancer risk for the carcinogens using EPA's unit risk factors. For lead and mercury, REL's correspond to one-third the levels in DER's Air Toxic Guidelines. REL's are determined using modeling procedures approved in the *plan approval*. Modeling procedures involve the stack exhaust parameters, the local meteorology and the surrounding terrain. An REL is the stack emission rate which, if emitted over a year, would result in the model predicting that the ambient concentration limit would be reached somewhere. Units of REL's are grains/dry standard cubic foot (gr/dscf) of exhaust gas corrected to 7% oxygen. There are cease waste charging criteria based on these REL's.

Telemetry System

This surveillant system allows for remotely accessing current emission data and other status information on the incinerator at any time using a personal computer modem. Emission and status data are to be available for every minute in the previous four months at all times.

Temporary Operating Permit

The legal authorization granted by Bureau after the *plan approval* phase for the limited operation of the incinerator. The limited operation allows for testing, shakedown and Department evaluation of compliance with the conditions and limitations of the *plan approval*. The temporary operating permit is valid for a limited period of time, not to exceed 120 days. This permit may be renewed if an *operating permit* is not merited by the expiration of the temporary operating permit. A temporary operating permit will not be used to sanction continued operation of the incinerator in violation of regulatory requirements.

TMEL (toxic metal emission limit)

TMEL's for all the toxic metals (listed in the **Ambient Impact Analysis** section of the BAT/Chapter 127) are established during the permitting process for a particular incinerator. The TMEL's are the lowest emission rates achievable on a consistent basis using the approved, best control technology. Units of TMEL's are grains/dry standard cubic foot (gr/dscf) of exhaust gas corrected to 7% oxygen. TMEL's may be significantly less than the *Risk Emission Limits (REL's)* but never more.

TMEL (toxic metal emission limit) guidelines

The Department will propose TMEL guidelines by December 31, 1989. These proposed TMEL guidelines will be based on compatibly derived, performance data from as many new incinerators as are available which

employ best available technology. Proposed TMEL Guidelines levels will be published in the Pennsylvania Bulletin as BAT criteria guidelines with a 30 day comment period provided before finalization.

Waste firing day

A calendar day when any waste is fired.

Written Department authorization is either a letter from the Regional Air Quality Program Manager, a *temporary operating permit*, an operating permit or a *consent order and agreement*. It is required before resuming waste charging after all cessation's of waste charging resulting from exceedances of air quality requirements. If, in the Department's judgment, a corrective measure can be implemented quickly and simply, just the letter can be used. Where significant time and complexity are involved in returning the MWI to compliance, the *consent order and agreement* should be used, e.g., replacing a continuous monitor or determining the cause and abating an emission control equipment problem.

VII. APPENDICES

VII.A. Penalty Adjustments

CEMS penalty adjustment requests are to be filed with the Regional Air Quality Program Manager within 30 days following the receipt of the Department CEMS reports by the company .

1. Upon receiving a request with adequate documentation from a source owner, the Regional Air Quality Program Managers may make penalty adjustments in accordance with the following:
 - a. Both opacity emission and data availability penalties may be reduced in a multiple MWI situation with one opacity CEMS when one or more incinerators are shut down. The penalty factor will be based upon the rated capacity of MWI's operating at the time of the violation.
 - b. Data availability penalty adjustments may be made under the following circumstances:
 - i. If a source owner demonstrates compliance with applicable emission standards by alternate means. The amount of the reduction depends on the degree of confidence with which compliance can be demonstrated.
 - ii. If the source owner demonstrates that the penalty was due to events or circumstances beyond the control of the source owner. The amount of the reduction depends on the extent to which the situation was uncontrollable.
 - iii. If the source owner takes extraordinary steps to reduce the extent of outage or steps to prevent similarly caused

outages. The amount of the reduction depends on the results effectiveness of the steps taken.

2. The Chief of the Division of Abatement and Compliance may adjust any penalty. Requests for such adjustments must be referred through the Regional Air Quality Program Manager.

VII.B. Universal Quarterly Report Formats

INSTRUCTIONS
STANDARD EMISSIONS REPORT
(Hourly Averages, Hard Copy and Floppy Disk)

NOTE: ALL ALPHABETIC ENTRIES TO BE MADE IN UPPER CASE

DESCRIPTIVE INFORMATION:

- "COMPANY NAME:" - Enter company name as it appears in DEP correspondence.
"LOCATION:" - Enter location as it appears in DEP correspondence.
"SOURCE:" - Enter source name as it appears in DEP correspondence.
"CEMS ID NO. (+SOURCE ID+ANALYZER ID):"
- Enter number (iiiiisa) where:
 iiii = CEMS ID NO. assigned by DEP
 s = SOURCE ID NO. assigned by DEP
 a = ANALYZER ID NO. assigned by DEP
 (0 if reporting data corrected in terms of standard)
"PARAMETER:" - Enter name of pollutant/parameter monitored (i.e. OPACITY, SO₂, Temperature, C.E., etc.)
"QUARTER:" - Enter number of quarter (1, 2, 3 or 4)
"YEAR:" - Enter last 2 digits of year (89, etc.)
"UNITS:" - Enter units reported (PPM, %X100, DEGREES, etc.)

HOURLY DATA/MONITORING CODES/PROCESS CODES:

For each hour of valid monitoring data, enter the hourly average (####) as follows:

If units are PPM or DEGREES, truncate to whole number and enter preceded by leading zeros if necessary to fill 4 spaces.

If units are %X100 (use whenever reporting data collected/calculated as %), multiply % by 100, truncate to whole number and enter preceded by leading zeros if necessary to fill 4 spaces.

For other units, contact the Source Testing and Monitoring Section for instructions.

For each hour of invalid monitoring data, enter II##, where ## = Monitoring Code (10-21) most responsible for invalidation of data.

For each hour of either valid or invalid monitoring data, enter the Process Code (01-09) that best represents the operating conditions of the process during that hour. The process code is to be entered following the period that separates it from the data entry.

CALIBRATION ERROR CHECK RESULTS:

For each analyzer involved in determining the reported data, enter the "CEMS ID NO. (+SOURCE ID+ANALYZER ID)" (as explained above) and the low (LO), mid (MD) and high (HI) calibration error check results from the required quarterly calibration error check. Report as percentages truncated to the "tenths" place. When more than one calibration error check is conducted during the quarter, report only the first set of results obtained.

SIGNATURE AND TITLE:

The report must be signed by the person having managerial responsibility for the source. The title of the person signing the report must appear below the signature.

(Universal Quarterly Report Formats continued, page 3)

STANDARD EMISSIONS REPORT PAGE 1
COMPANY NAME:
LOCATION:
SOURCE:
CEMS ID NO. (+SOURCE ID+ANALYZER ID):
PARAMETER:
QUARTER:
YEAR:
UNITS:

HOUR	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC
DAY								
01	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
02	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
03	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
04	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
05	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
06	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
07	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
08	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
09	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
10	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
11	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
12	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
13	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

14 _____

 15 _____

(Universal Quarterly Report Formats continued, page 4)

STANDARD EMISSIONS REPORT PAGE 2

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

HOURL	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC

DAY

16 _____

 17 _____

 18 _____

 19 _____

 20 _____

 21 _____

 22 _____

 23 _____

 24 _____

 25 _____

 26 _____

 27 _____

 28 _____

29 _____

30 _____

31 _____

32 _____

(Universal Quarterly Report Formats continued, page 5)

STANDARD EMISSIONS REPORT PAGE 3

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

HOUR	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC

DAY

33	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
34	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
35	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
36	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
37	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
38	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
39	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
40	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
41	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
42	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
43	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
44	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
45	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
46	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
47	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.
	_____.	_____.	_____.	_____.	_____.	_____.	_____.	_____.

48 _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
49 _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .

(Universal Quarterly Report Formats continued, page 6)

STANDARD EMISSIONS REPORT PAGE 4

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

HOUR	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC

DAY

50	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
51	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
52	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
53	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
54	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
55	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
56	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
57	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
58	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
59	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
60	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
61	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
62	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
63	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
64	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

65 _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
66 _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .

(Universal Quarterly Report Formats continued, page 7)

STANDARD EMISSIONS REPORT PAGE 5

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

HOUR	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC

DAY

67	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
68	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
69	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
70	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
71	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
72	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
73	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
74	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
75	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
76	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
77	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
78	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
79	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
80	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
81	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

82 _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
83 _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .
_____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ . _____ .

(Universal Quarterly Report Formats continued, page 8)

STANDARD EMISSIONS REPORT PAGE 6

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

HOUR	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC	XXXX.PC

DAY

84	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
85	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
86	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
87	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
88	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
89	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
90	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
91	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____
92	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

CALIBRATION ERROR CHECK RESULTS (%):

ID	_____	_____	_____	_____	_____	_____	_____	_____
LO	_____	_____	_____	_____	_____	_____	_____	_____
MD	_____	_____	_____	_____	_____	_____	_____	_____
HI	_____	_____	_____	_____	_____	_____	_____	_____

PROCESS CODES (PC):

- | | | |
|--------------------------|------------------------------|--------------------------|
| 01= CHANGING FUELS | 04= SHUTDOWN | 07= CLEAN CONTROL EQUIP. |
| 02= CONTROL EQUIP. MALF. | 05= CHANGING OPERATING LEVEL | 08= NORMAL OPERATION |
| 03= STARTUP | 06= CLEAN PROCESS EQUIP. | 09= OTHER |

MONITORING CODES (MC) (XXXX=IIMC if invalid):

- | | |
|-------------------------------------|--------------------------------------|
| 10= REQUIRED ADJUSTMENT NOT MADE | 16= PRIMARY ANALYZER MALFUNCTION |
| 11= EXCESS DRIFT PRIMARY ANALYZER | 17= ANCILLARY ANALYZER MALFUNCTION |
| 12= EXCESS DRIFT ANCILLARY ANALYZER | 18= DATA HANDLING SYSTEM MALFUNCTION |
| 13= PROCESS DOWN | 19= SAMPLE INTERFACE MALFUNCTION |
| 14= RECALIBRATION | 20= CORRECTIVE MAINTENANCE |
| 15= PREVENTIVE MAINTENANCE | 21= OTHER |

TO THE BEST OF MY KNOWLEDGE, THE INFORMATION IN THIS REPORT REPRESENTS TRUE

AND ACCURATE DATA.

XXXX = PPM FOR HCL,SO2,CO,NOX
%X100 FOR O2,C.E.,SO2R SIGNED _____
HCLR,OPACITY
DEG FOR TEMPERATURE TITLE _____

(Universal Quarterly Report Formats continued, page 9)

CEMS DATA FORMAT FOR FLOPPY DISKS (Hourly Averages)

NOTE: Data must be recorded on floppy disks readable by IBM PC-compatible computer disk drives in one of the following formats:

- DS, DD, 96TPI, 5-1/4 inch, 360K
- DS, HD, 96TPI, 5-1/4 inch, 1.2M
- DS, DD, 135TPI, 3-1/2 inch, 720K
- DS, HD, 135TPI, 3-1/2 inch, 1.4M

File names: iiiiisaH.qyy where - iiii = CEMS ID NO. assigned by DEP
s = SOURCE ID NO. assigned by DEP
a = ANALYZER ID NO. assigned by DEP
(always '0' for reports)
q = QUARTER NO. (1-4)
yy = LAST 2 DIGITS OF YEAR

Data is recorded on a source basis corrected (for moisture, %O₂, etc.) as standard upper case ASCII text as follows:

([CR] = carriage return, Decimal ASCII 13; [LF] = line feed, Decimal ASCII 10; [FF] = form feed, Decimal ASCII 12; \ = space, Decimal ASCII 32; [EOF] = end of file, Decimal ASCII 26)

(Upper case indicates literal entry, lower case indicates replace with actual information)

Line Data

```
1 STANDARD\EMISSIONS\REPORT\PAGE\1[CR][LF]
2 COMPANY\NAME:\company name[CR][LF]
3 LOCATION:\location[CR][LF]
4 SOURCE:\source name[CR][LF]
5 CEMS\ID\NO.\(+SOURCE\ID+ANALYZER\ID):\iiiiisa[CR][LF]
6 PARAMETER:\parameter name (opacity, temperature, etc.)[CR][LF]
7 QUARTER:\q[CR][LF]
8 YEAR:\yy[CR][LF]
9 UNITS:\units reported (PPM, %X100, DEGREES, etc.)[CR][LF]
10 [CR][LF]
11 HOUR\1\2\3\4\5\6\7\8[CR][LF]
12 \9\10\11\12\13\14\15\16[CR][LF]
13 \17\18\19\20\21\22\23\24[CR][LF]
14 \\XXXX.PC\XXXX.PC\XXXX.PC\XXXX.PC\XXXX.PC\XXXX.PC\XXXX.PC\XXXX.PC[CR][LF]
15 DAY[CR][LF]
16 01\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
17 \\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
18 \\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
19 repeat lines 16 through 18, replacing 1st 2 characters with 02, 03, etc.
thru
57
```


(Universal Quarterly Report Formats continued, page 10)

```
58 15\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
59  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
60  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF][FF]
61 STANDARD\EMISSIONS\REPORT\PAGE\2[CR][LF]
62 CEMS\ID\NO.\(+SOURCE\ID+ANALYZER\ID):\iiiiisa[CR][LF]
63 QUARTER:\q[CR][LF]
64 YEAR:\yy[CR][LF]
65 repeat lines 11 through 15
thru
69
70 repeat lines 16 through 18, replacing 1st 2 characters with 16, 17, etc.
thru
117
118 32\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
119  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
120  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF][FF]
121 STANDARD\EMISSIONS\REPORT\PAGE\3[CR][LF]
122 CEMS\ID\NO.\(+SOURCE\ID+ANALYZER\ID):\iiiiisa[CR][LF]
123 QUARTER:\q[CR][LF]
124 YEAR:\yy[CR][LF]
125 repeat lines 11 through 15
thru
129
130 repeat lines 16 through 18, replacing 1st 2 characters with 33, 34, etc.
thru
177
178 49\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
179  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
180  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF][FF]
181 STANDARD\EMISSIONS\REPORT\PAGE\4
182 CEMS\ID\NO.\(+SOURCE\ID+ANALYZER\ID):\iiiiisa[CR][LF]
183 QUARTER:\q[CR][LF]
184 YEAR:\yy[CR][LF]
185 repeat lines 11 through 15
thru
189
190 repeat lines 16 through 18, replacing 1st 2 characters with 50, 51, etc.
thru
237
238 66\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
239  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF]
240  \ \xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc\xxxx.pc[CR][LF][FF]
241 STANDARD\EMISSIONS\REPORT\PAGE\5[CR][LF]
242 CEMS\ID\NO.\(+SOURCE\ID+ANALYZER\ID):\iiiiisa[CR][LF]
243 QUARTER:\q[CR][LF]
244 YEAR:\yy[CR][LF]
245 repeat lines 11 through 15
thru
249
```


NOTE: for xxxx = ppm or degrees, truncate to whole number
= % O2, C.E., SO2R, HCLR, OR OPACITY, multiply by 100 and truncate
to whole number

ALWAYS FILL xxxx WITH LEADING ZEROS!!!

VII.C. OPACITY INCIDENT REPORT FORMATS

INSTRUCTIONS
OPACITY EXCESS EMISSIONS REPORT
(Hard Copy and Floppy Disk)

NOTE: ALL ALPHABETIC ENTRIES TO BE MADE IN UPPER CASE

DESCRIPTIVE INFORMATION:

- "COMPANY NAME:" - Enter company name as it appears in DEP correspondence.
"LOCATION:" - Enter location as it appears in DEP correspondence.
"SOURCE:" - Enter source name as it appears in DEP correspondence.
"CEMS ID NO. (+SOURCE ID+ANALYZER ID):"
- Enter number (iiiiisa) where:
iiii = CEMS ID NO. assigned by DEP
s = SOURCE ID NO. assigned by DEP
a = ANALYZER ID NO. assigned by DEP
(0 if reporting data corrected in terms of standard)
"QUARTER:" - Enter number of quarter (1, 2, 3 or 4)
"YEAR:" - Enter last 2 digits of year (89, etc.)
"NO. OF ENTRIES: "
- Enter total number of data lines (count each column separately)
appearing in report.

DATA/PROCESS CODES:

NOTE - Alternate columns for entries (1st entry in left column, 2nd in right column, 3rd in left column, etc.)

For each hour when excess emissions occurred, enter:

- DATE Enter as mm/dd/yy using leading zeros where appropriate.
- HR - Enter as 01 through 24 using leading zeros as necessary to fill 2 spaces.
- PC - Enter appropriate Process Code using leading zeros as necessary to fill 2 spaces. Use code which best represents the operating conditions of the process during the hour.
- #MIN 10-29 - Enter the number of one-minute averages in the specified range (for standards other than MWI opacity standards, contact the Source Testing and Monitoring Section for specific instructions), using leading zeros as necessary to fill 2 spaces.
- #MIN >29 - Enter the number of one-minute averages in the specified range (for standards other than MWI opacity standards, contact the Source Testing and Monitoring Section for specific instructions), using leading zeros as necessary to fill 2 spaces.

(Opacity Incident Report Formats continued, page 2)

1MAX MIN - Enter the value of the highest one-minute average during the hour (01-99) using leading zeros as necessary to fill 2 spaces.

4MAX MIN - Enter the value of the fourth highest one-minute average during the hour (01- 99) using leading zeros as necessary to fill 2 spaces.

SIGNATURE AND TITLE:

The report must be signed by the person having managerial responsibility for the source. The title of the person signing the report must appear below the signature.

TO THE BEST OF MY KNOWLEDGE, THE INFORMATION IN THIS REPORT REPRESENTS TRUE AND ACCURATE DATA.

SIGNED _____

TITLE _____

(Opacity Incident Report Formats continued, page 4)

CEMS DATA FORMAT FOR FLOPPY DISKS (Opacity Excess Emissions)

NOTE: Data must be recorded on floppy disks readable by IBM PC-compatible computer disk drives in one of the following formats:

- DS, DD, 96TPI, 5-1/4 inch, 360K
- DS, HD, 96TPI, 5-1/4 inch, 1.2M
- DS, DD, 135TPI, 3-1/2 inch, 720K
- DS, HD, 135TPI, 3-1/2 inch, 1.4M

File names: iiiiisaE.qyy where - iiii = CEMS ID NO. assigned by DEP
s = SOURCE ID NO. assigned by DEP
a = ANALYZER ID NO. (always '0' for reports)
q = QUARTER NO. (1-4)
yy = LAST 2 DIGITS OF YEAR

Data is recorded on a source basis as standard upper case ASCII text as follows:

([CR] = carriage return, Decimal Ascii 13; [LF] = line feed, Decimal Ascii 10; [FF] = form feed, Decimal Ascii 12; \ = space, Decimal Ascii 32; [EOF] = end of file, Decimal Ascii 26)

(Upper case indicates literal entry, lower case indicates replace with actual information)

Line Data

```
1  OPACITY\EXCESS\EMISSIONS\REPORT\PAGE\1[CR][LF]
2  COMPANY\NAME:\company name[CR][LF]
3  LOCATION:\location[CR][LF]
4  SOURCE:\source name[CR][LF]
5  CEMS\ID\NO.\(+SOURCE ID+ANALYZER ID):\iiiiisa[CR][LF]
6  QUARTER:\q[CR][LF]
7  YEAR:\yy\////////////////////////////////////\NO.\OF\ENTRIES:[CR][LF]
8  //////////////////////////////////#MIN\#MIN\1MAX\4MAX\!!////////////////////////////////#MIN\#MIN\1MAX\4MAX[CR][LF]
9  DATE\HR\CODE\10-29\>29\MIN\MIN\!!\DATE\HR\CODE\10-29\>29\MIN\MIN[CR][LF]
10 [CR][LF]
11 xx/xx/xx\xx\xx\xx\xx\xx\xx\!!\xx/xx/xx\xx\xx\xx\xx\xx\xx[CR][LF]
12 repeat line 11
thru
50
51 PROCESS\OPERATIONAL\STATUS\CODES:[CR][LF]
52 01=\CHANGING\FUELS\04=\SHUTDOWN\07=\CLEAN\CONTROL\EQUIP.[CR][LF]
53 02=\CONTROL\EQUIP.MALF.\05=\CHANGING\OPERATING\LEVEL\08=\NORMALOPERATION[CR][LF]
54 03=\STARTUP\06=\CLEAN\PROCESS\EQUIP.\09=[CR][LF]
```


VII.D. LOW TEMPERATURE INCIDENT REPORT FORMATS

INSTRUCTIONS
LOW TEMPERATURE REPORT
(Hard Copy and Floppy Disk)

NOTE: ALL ALPHABETIC ENTRIES TO BE MADE IN UPPER CASE

DESCRIPTIVE INFORMATION:

- "COMPANY NAME:" - Enter company name as it appears in DEP correspondence.
"LOCATION:" - Enter location as it appears in DEP correspondence.
"SOURCE:" - Enter source name as it appears in DEP correspondence.
"CEMS ID NO. (+SOURCE ID+ANALYZER ID):"
- Enter number (iiiiisa) where:
iiii = CEMS ID NO. assigned by DEP
s = SOURCE ID NO. assigned by DEP
a = ANALYZER ID NO. assigned by DEP
(0 if reporting data corrected in terms of standard)
"QUARTER:" - Enter number of quarter (1, 2, 3 or 4)
"YEAR:" - Enter last 2 digits of year (89, etc.)
"NO. OF ENTRIES:"
- Enter total number of data lines (count each column separately)
appearing in report.

DATA/PROCESS CODES:

NOTE - Alternate columns for entries (1st entry in left column, 2nd in right column, 3rd in left column, etc.)

For each hour when low temperature occurred, enter:

- DATE BEG - Enter date as mm/dd/yy using leading zeros where appropriate.
HR BEG - Enter hour as 01 through 24 using leading zeros as necessary to fill 2 spaces.
MIN BEG - Enter minute low temperature incident began as 01 through 60 using leading zeros as necessary to fill 2 spaces.
#MIN LONG - Enter the number of minutes of low temperature during the hour using leading zeros as necessary to fill 4 spaces.
PC - Enter appropriate Process Code using leading zeros as necessary to fill 2 spaces. Use code which best represents the operating conditions of the process during the hour.

(Low Temperature Incident Report Formats continued, page 2)

AVG xxxx - Enter the average of the low temperatures using leading zeros as necessary to fill 4 spaces.

LOW xxxx - Enter the lowest one-minute average temperature during the hour using leading zeros as necessary to fill 4 spaces.

SIGNATURE AND TITLE:

The report must be signed by the person having managerial responsibility for the source. The title of the person signing the report must appear below the signature.

(Low Temperature Incident Report Formats continued, page 3)

LOW TEMPERATURE REPORT

COMPANY NAME:

LOCATION:

SOURCE:

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

NO. OF ENTRIES:

DATE	HOUR	MIN	#MIN	AVG	LOW	!!	DATE	HOUR	MIN	#MIN	AVG	LOW		
BEG	BEG	BEG	LONG	PC	xxxx	xxxx	!!	BEG	BEG	BEG	LONG	PC	xxxx	xxxx
/	/	/					!!	/	/	/				
/	/	/					!!	/	/	/				
/	/	/					!!	/	/	/				
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/	/	/					!!	/	/	/				

PROCESS CODES (PC):

- 01= CHANGING FUELS
- 02= CONTROL EQUIP. MALF.
- 03= STARTUP
- 04= SHUTDOWN
- 05= CHANGING OPERATING LEVEL
- 06= CLEAN PROCESS EQUIP.
- 07= CLEAN CONTROL EQUIP.
- 08= NORMAL OPERATION
- 09= OTHER

TO THE BEST OF MY KNOWLEDGE, THE INFORMATION IN THIS REPORT REPRESENTS TRUE AND ACCURATE DATA.

XXXX = DEG FOR TEMPERATURE

SIGNED _____

TITLE _____

(Low Temperature Incident Report Formats continued, page 4)

CEMS DATA FORMAT FOR FLOPPY DISKS (Low Temperature Report)

NOTE: Data must be recorded on floppy disks readable by IBM PC-compatible computer disk drives in one of the following formats:

- DS, DD, 96TPI, 5-1/4 inch, 360K
- DS, HD, 96TPI, 5-1/4 inch, 1.2M
- DS, DD, 135TPI, 3-1/2 inch, 720K
- DS, HD, 135TPI, 3-1/2 inch, 1.4M

File names: `iiiiisaT.qyy` where - `iiii` = CEMS ID NO. assigned by DEP
`s` = SOURCE ID NO. assigned by DEP
`a` = ANALYZER ID NO. (always '0' for reports)
`q` = QUARTER NO. (1-4)
`yy` = LAST 2 DIGITS OF YEAR

Data is recorded on a source basis as standard upper case ASCII text as follows:

([CR] = carriage return, Decimal Ascii 13; [LF] = line feed, Decimal Ascii 10; [FF] = form feed, Decimal Ascii 12; \ = space, Decimal Ascii 32)

(Upper case indicates literal entry, lower case indicates replace with actual information)

Line Data

```

1  LOW\TEMPERATURE\REPORT\PAGE\1[CR][LF]
2  COMPANY\NAME:\company name[CR][LF]
3  LOCATION:\location[CR][LF]
4  SOURCE:\source name[CR][LF]
5  CEMS ID NO. (+SOURCE ID+ANALYZER ID):\iiiiisa[CR][LF]
6  QUARTER:\q[CR][LF]
7  YEAR:\yy[CR][LF]
8  DATE\\HOUR\MIN\#MIN\\AVG\\LOW\\!!\DATE\\HOUR\MIN\#MIN\\AVG\\LOW\[CR][LF]
9  START\\BEG\BEG\LONG\PC\XXXX\XXXX\\!!\START\\BEG\\BEG\LONG\PC\XXXX\XXXX[CR][LF]
10 [CR][LF]
11 xx/xx/xx\xx\xx\xxxx\xx\xxxx\xxxx\\!!\xx/xx/xx\xx\xx\xxxx\xx\xxxx\xxxx[CR][LF]
12 repeat line 11
thru
49
50 PROCESS\CODES\PC):[CR][LF]
51 01=\CHANGING\FUELS\\04=\SHUTDOWN\\07=\CLEAN\CONTROL\EQUIP.[CR][LF]
52 02=\CONTROLEQUIP.\MALF.\05=CHANGING\OPERATING\LEVEL\08=\NORMAL\OPERATION[CR][LF]
53 03=\STARTUP\\06=\CLEAN\PROCESS\EQUIP.\\09=\OTHER[CR][LF]
54 [CR][LF]
55 TO\THEBEST\OFMY\KNOWLEDGE,THE\INFORMATION\IN\THIS\REPORT\REPRESENTS\TRUE[CR][LF]
56 AND\ACCURATE\DATA.[CR][LF]
57 [CR][LF]
58 XXXX\=\DEG\\FOR\TEMPERATURE\\SIGNED\_____ [CR][LF]
59 [CR][LF]
60 \\TITLE\_____ [CR][LF]

```

If additional data must be reported, enter [FF] then repeat lines 1 through 60, but identify as PAGE 2, PAGE 3, etc.

VII.E. WASTE CHARGING INTERLOCK INCIDENT REPORT FORMATS

INSTRUCTIONS
MWI INTERLOCK INCIDENT REPORT
(Hard Copy and Floppy Disk)

NOTE: ALL ALPHABETIC ENTRIES TO BE MADE IN UPPER CASE

DESCRIPTIVE INFORMATION:

- "COMPANY NAME:" - Enter company name as it appears in DEP correspondence.
"LOCATION:" - Enter location as it appears in DEP correspondence.
"SOURCE:" - Enter source name as it appears in DEP correspondence.
"CEMS ID NO. (+SOURCE ID+ANALYZER ID):"
- Enter number (iiiiisa) of associated opacity CEMS where:
iiii = CEMS ID NO. assigned by DEP
s = SOURCE ID NO. assigned by DEP
a = ANALYZER ID NO. assigned by DEP
(0 if reporting data corrected in terms of standard)
"QUARTER:" - Enter number of quarter (1, 2, 3 or 4)
"YEAR:" - Enter last 2 digits of year (89, etc.)
"NO. OF ENTRIES:"
- Enter total number of data lines (count each column separately)
appearing in report.

DATA/PROCESS CODES:

NOTE - Alternate columns for entries (1st entry in left column, 2nd in right column, 3rd in left column, etc.)

For each hour when an incident requiring cessation of waste charging occurred, enter:

- DATE BEG - Enter date waste charging was ceased as mm/dd/yy using leading zeros where appropriate.
HR BEG - Enter hour waste charging was ceased as 01 through 24 using leading zeros as necessary to fill 2 spaces.
MN BEG - Enter minute waste charging was ceased as 01 through 60 using leading zeros as necessary to fill 2 spaces.
#MIN LONG - Enter the length of the incident during the hour (until compliance with all standards was achieved, thus allowing charging of waste) in minutes using leading zeros as necessary to fill 4 spaces.

(Waste Charging Interlock Incident Report Formats continued, page 2)

- PC - Enter appropriate Process Code using leading zeros as necessary to fill 2 spaces. Use code which best represents the operating conditions of the process during the hour.
- AVG xxxx - Enter the average value, during non-charging time, of the parameter responsible for cessation of waste charging (Opacity, Temperature, O2, C.E.) using leading zeros as necessary to fill 4 spaces. For Temperature, enter as degrees. For Opacity, O2 and C.E. enter as %X100 truncated to a whole number.
- PARAMETER
NAME - Enter the name of the parameter responsible for cessation of waste charging (Opacity, Temperature, O2, C.E.).

SIGNATURE AND TITLE:

The report must be signed by the person having managerial responsibility for the source. The title of the person signing the report must appear below the signature.

(Waste Charging Interlock Incident Report Formats continued, page 3)

INTERLOCK INCIDENT REPORT PAGE 1

COMPANY NAME:

LOCATION:

SOURCE:

CEMS ID NO. (+SOURCE ID+ANALYZER ID):

QUARTER:

YEAR:

NO. OF ENTRIES:

DATE	HOUR	MIN	#MIN	AVG	PARAMETER	!!	DATE	HOUR	MIN	#MIN	AVG	PARAMETER
START	BEG	BEG	LONG	xxxx	NAME	!!	START	BEG	BEG	LONG	xxxx	NAME
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____
___/___/___	__	__	__	__	_____	!!	___/___/___	__	__	__	__	_____

PROCESS CODES (PC):
 01= CHANGING FUELS 04= SHUTDOWN 07= CLEAN CONTROL EQUIP.
 02= CONTROL EQUIP. MALF. 05= CHANGING OPERATING LEVEL 08= NORMAL OPERATION
 03= STARTUP 06= CLEAN PROCESS EQUIP. 09= OTHER

TO THE BEST OF MY KNOWLEDGE, THE INFORMATION IN THIS REPORT REPRESENTS TRUE

AND ACCURATE DATA.

xxxx = %x100 for C.E.,O2,Opacity
deg for Temperature

Signed _____

Title _____

(Waste Charging Interlock Incident Report Formats continued, page 4)

CEMS DATA FORMAT FOR FLOPPY DISKS (Interlock Incident Report)

NOTE: Data must be recorded on floppy disks readable by IBM PC-compatible computer disk

drives in one of the following formats:

- DS, DD, 96TPI, 5-1/4 inch, 360K
- DS, HD, 96TPI, 5-1/4 inch, 1.2M
- DS, DD, 135TPI, 3-1/2 inch, 720K
- DS, HD, 135TPI, 3-1/2 inch, 1.4M

File names: iiiiisaI.qyy where - iiii = CEMS ID NO. assigned by DEP
 (of associated opacity CEMS)
 s = SOURCE ID NO. assigned by DEP
 a = ANALYZER ID NO. (always '0' for reports)
 q = QUARTER NO. (1-4)
 yy = LAST 2 DIGITS OF YEAR

Data is recorded on a source basis as standard upper case ASCII text as follows:

([CR] = carriage return, Decimal Ascii 13; [LF] = line feed, Decimal Ascii 10; [FF] = form feed, Decimal Ascii 12; \ = space, Decimal Ascii 32)

(Upper case indicates literal entry, lower case indicates replace with actual information)

Line Data

```

1 INTERLOCK\INCIDENT\REPORT\PAGE\1[CR][LF]
2 COMPANY\NAME:\company name[CR][LF]
3 LOCATION:\location[CR][LF]
4 SOURCE:\source name[CR][LF]
5 CEMS\ID\NO.\(+SOURCE ID+0):\iiiiiso[CR][LF]
6 QUARTER:\q[CR][LF]
7 YEAR:\yy\////////////////////////////////\NO.\OF\ENTRIES:[CR][LF]
8 DATE\HOUR\MIN\#MIN\AVG\PARAMETER\!!\DATE\HOUR\MIN\#MIN\AVG\PARAMETER[CR][LF]
9 START\BEG\BEG\LONG\XXXX\NAME\!!\START\BEG\BEG\LONG\XXXX\NAME[CR][LF]
10 [CR][LF]
11 xx/xx/xx\xx\xx\xxxx\xxxx\xxxxxxxx\!!\xx/xx/xx\xx\xx\xxxx\xxxx\xxxxxxxx[CR][LF]
12 repeat line 11
thru
49
50 PROCESS\CODES\PC):[CR][LF]
51 01=\CHANGING\FUELS\04=\SHUTDOWN\07=\CLEAN\CONTROL\EQUIP.[CR][LF]
52 02=\CONTROL\EQUIP.MALF.\05=\CHANGING\OPERATING\LEVEL08=\NORMAL\OPERATION[CR][LF]
53 03=\STARTUP\06=\CLEAN\PROCESS\EQUIP.\09=\OTHER[CR][LF]
54 [CR][LF]
55 TO\THE\BESTOF\MY\KNOWLEDGE,THE\INFORMATION\IN\THIS\REPORT\REPRESENTSTRUE[CR][LF]
56 AND\ACCURATE\DATA.[CR][LF]
57 [CR][LF]
58 XXXX\=%X100\FOR\C.E.,O2,OPACITY\SIGNED\_____ [CR][LF]
59 \DEG\FOR\TEMPERATURE[CR][LF]

```

60 \\\TITL_____ [CR][LF]

If additional data must be reported, enter [FF] then repeat lines 1 through 60, but identify as PAGE 2, PAGE 3, etc.

VII.F. DATA LOGGING FORMAT AND ACCESS PROTOCOL FOR DATA TELEMETRY

DATA LOGGING FORMAT FOR TELEMETRY

Each one-minute, hourly and 24-hr data logger record, when transmitted upon request, must be 24 bytes (8 bits per byte) long and consist of:

<u>Byte #</u>	<u>Bit #</u>	<u>Contents</u>
1-7		Analyzer ID assigned by DER (1-5) CEMS ID NO. (6) SOURCE ID NO. (7) ANALYZER ID NO. (0 for data corrected and in terms of standard)
8-13		Date (mddyy) fill with leading zeros
14-15		Hour # (1-24) fill with leading zeros
16-17		Minute # (1-62) fill with leading zeros (61 = hourly average, 62 = average for last 24 hours)
18-21		Data average filled with leading zeros (xxxx) in: ppm for - HCl, SO ₂ , CO or NO _x % x 100 for - HCl reduction, SO ₂ reduction, Combustion Efficiency, Opacity, O ₂ or CO ₂ degrees for - temperature
22	1	Set if reason code 1 is true
	2	2
	3	3
	4	4
	5	5
	6	6
	7	7
	8	8
23	1	Set if reason code 9 is true
	2	10
	3	11
	4	12
	5	13
	6	14
	7	15
	8	16
24	1	Set if reason code 17 is true
	2	18
	3	19
	4	20
	5	21
	6	Not used
	7	Not used
	8	Not used

Note: This requires only that 7 bytes of information (identified as 18-24 above) be stored for each minute as long as the storage method allows determination of the remainder of the information (identified as 1-17 above) for proper construction of the record for transmission. Data must be in standard ASCII format. Data must be recorded both in "raw" analyzer output terms and also in terms of the applicable standard as one-minute, hourly and 24-hr averages. The datalogger must provide the capability to transmit

records when queried given the Analyzer ID no., Date, Hour and Minute. Data must be maintained on-line for four months.

(Data Logging Format & Access Protocol for Data Telemetry continued,
page 2)

DATA TELEMETRY DATA ACCESS PROTOCOL

The following pages explain the protocol to be used to transmit data recorded by the data logger at each source to agency persons via a dial-up telecommunications system.

The source must operate and maintain a two-line "Server" computer system which will process asynchronous serial binary signal format calls at from 1200 to 19200 BAUD with MNP error correction capability (user-selected), using 8 databits, no parity bit, 1 stop bit, no echo of incoming data to other computer (8N1H). One of the dial-up lines will be for the exclusive use of DER personnel and must only allow logons from authorized DER users. The second dial-up line will be for access by other parties and must allow logons from any authorized user.

Each "User" will use DER-developed software for telecommunications with the "Server".

SERVER INFORMATION

Records sent by user:

<u>RECORD TYPE</u>	<u>BYTES</u>	<u>CONTENTS</u>
Logon Request	01-07	"LOGON!!"
	08-13	LOGON ID
	14-17	"0000"
	18	CR
Logoff Request	01-07	"LOGOFF!"
	08-17	"00000000000"
	18	CR
Time Request	01-07	"TIME???"
	08-17	"00000000000"
	18	CR
Data Request	01-07	Analyzer ID
	08-13	Date (mmddyy)
	14-15	Hour (1-24)
	16-17	Minute (1-62)
		(61 = hourly average, 62 = average for last 24 hours)
	18	CR

Records sent by server:

<u>RECORD TYPE</u>	<u>BYTES</u>	<u>CONTENTS</u>
Logon Response	01-07	"READY!!" If valid logon ID "NOWAY!!" If invalid logon ID
	08-24	"00000000000000000000"
	25-26	CRC
	27	CR
Logoff Response	01-07	"BYEBYE!"
	08-24	"00000000000000000000"
	25-26	CRC
	27	CR
Time Response	01-07	"TIME!!!"
	08-13	Date
	14-15	Hour
	16-17	Minute
	18-24	"0000000"
	25-26	CRC
	27	CR

(Data Logging Format & Access Protocol for Data Telemetry continued,
page 4)

Data Response	01-07	Analyzer ID
	08-13	Date
	14-15	Hour
	16-17	Minute
	18-21	Data Avg (xxxx) or "RLEN" if request was not 18 bytes (including CR) "ANAL" if invalid analyzer ID "DATE" if invalid date "HOUR" if invalid hour "MINU" if invalid minute "EARL" if request for data older than required storage "LATE" if request for data later than current time "MISS" if data should be available but isn't
	22-24	Status info
	25-26	CRC
	26	CR

NOTES:

Date, Hour, Minute and Data Avg always filled w/ leading zeros
CRC = 16 bit Cyclic Redundancy Check Value
CR = Carriage Return (Decimal ASCII 13)

SERVER ACTIVITY LOGIC

START: (Server set to auto answer)
If no CONNECT, goto START

CONNECT:
Adjust to user BAUD rate

LOGON:
Receive request
If valid logon, send valid logon response and goto MAIN
If not valid logon and less than 3 tries, send invalid logon response and goto LOGON
If not valid logon and 3 tries, send logoff response, disconnect and goto START

MAIN:
Receive request
If time request, send time response and goto MAIN
If data request, send data response and goto MAIN
If logoff request, send logoff response, disconnect and goto START

NOTE:

While waiting to receive request, if no request in 3 minutes, send logoff response, disconnect and goto start

VIII. REFERENCES

1. "Continuous Emission Monitoring System Inspection Manual", Revision 1, Department of Environmental Resources, Bureau of Air Quality Control, Harrisburg, PA; March 1986 or as revised.

2. "Continuous Source Monitoring Manual", Revision 4, Department of Environmental Resources, Bureau of Air Quality Control, Harrisburg, PA; August 1987 or as revised.

3. "Guidelines on Air Quality Modeling", Department of Environmental Resources, Bureau of Air Quality Control, Harrisburg, PA; January 1983 or as revised.

4. "Source Testing Manual", Revision 1, Department of Environmental Resources, Bureau of Air Quality Control, Harrisburg, PA; January 1983 or as revised.