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# Technical Guidance On The Review And Use Of Coal Sampling And Analysis (CSA) Data

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16. ABSTRACT  This document provides technical guidance to EPA's regional offices and State and local control agencies on the review and use of coal sampling and analysis (CSA) data in monitoring the compliance status of Subpart D boilers burning compliance coal and other large boilers which are not presently using SO <sub>2</sub> Continuous Emission Monitoring Systems (CEMS) nor submitting SO <sub>2</sub> Excess Emission Reports (EERs). The guidance is not applicable when the CSA method is specified as the emission compliance, alternative emission compliance, or sulfur-in-fuel compliance test method. The guideline describes specific forms and calculation methods to convert the source's coal sampling and analysis data into SO <sub>2</sub> EERs.		
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# **Technical Guidance On The Review And Use Of Coal Sampling And Analysis (CSA) Data**

● U.S. ENVIRONMENTAL PROTECTION AGENCY  
Stationary Source Compliance Division  
Office of Air Quality Planning and Standards  
Washington, D.C. 20460

October 1985

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TRANSMITTAL MEMORANDUM

FINAL GUIDANCE ON THE REVIEW AND USE OF  
COAL SAMPLING AND ANALYSIS DATA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
AIR AND RADIATION

OCT 30 1985

MEMORANDUM

SUBJECT: Final Technical Guidance on the Review and Use of  
Coal Sampling and Analysis Data

FROM: Director  
Stationary Source Compliance Division  
Office of Air Quality Planning and Standards

TO: Air Management Division Directors  
Regions I, III, V, and IX

Air and Waste Management Division Director  
Region II

Air, Pesticides, and Toxics Management Division Directors  
Regions IV and VI

Air and Toxics Division Directors  
Regions VII, VIII, and X

I. INTRODUCTION

This memorandum transmits two documents: (A) final technical guidance on the acquisition, review and use of coal sampling and analysis (CSA) data from large coal-fired boilers where the monitoring data are used for targeting agency follow-up actions; and (B) an example of the calculations performed in accordance with item A. The guidance is not applicable when the CSA method is specified as the emission compliance, alternative emission compliance, or sulfur-in-fuel compliance test method. Furthermore, this guidance may be helpful to State and local agencies as well as EPA's Regional Offices.

On April 5, 1985, and again on August 16, 1985, a draft of this guidance was distributed to the Regional Offices and interested Headquarters offices. Comments were received from six Regional offices and two Headquarters offices. In general, the comments were very supportive of the drafts, and included a number of constructive suggestions for improving the document.

## II. SUMMARY AND CONCLUSIONS

The guidance presented in Attachment I supplements the October 5, 1984 source targeting document entitled "Technical Guidance on the Review and Use of Excess Emission Reports" (hereafter called the 1984 EER Guidance) by addressing those large coal-fired boilers which burn "compliance" coal but which are not currently required to operate SO<sub>2</sub> CEMS, nor to report SO<sub>2</sub> CEMS data. Taken together, the CSA and EER guidance packages equip agencies to review and use effectively quarterly SO<sub>2</sub> emission data, whether derived from SO<sub>2</sub> CEMS or CSA methodologies.

This guidance recommends that agencies periodically request source submittal of limited quantities of CSA information. Such information will generally be available to the sources as a result of their routine business practices. In the event such information is not currently available at a source, the source's cost of acquiring it should not be substantial.

Furthermore, the guidance strongly recommends that agencies use and follow-up the CSA information in a manner comparable to how it presently uses CEMS-derived excess emission reports (EERs).

The guidance contained in Attachment I provides forms, equations and examples of how to convert CSA data into SO<sub>2</sub> EERs. Attachment II presents actual calculations, discussion and action recommendations, based upon empirical CSA data, and is consistent with Attachment I.

## III. MAJOR COMMENTS

### A. Timing of Issuing the Subject Technical Guidance

Most of the commenters recommended that SSCD issue the subject guidance as soon as possible. One Regional commenter questioned the decision to issue it now, given that the Agency is contemplating possible revision of the current

NSPS Subpart D rules. A different Regional Office, one which is presently using a sophisticated enhancement of the CSA procedure described herein, recommended that we issue CSA guidance in two phases, the subject guidance now and a more sophisticated version later.

SSCD concluded that it is appropriate to issue the subject CSA guidance now, even though a possible CSA alternative compliance method (Reference Method 19-A) is contained in the current draft of the NSPS Subpart D revision. Issuing this technical guidance now is appropriate because:

- 1) the subject document is relevant to many non-NSPS, large coal-fired, non-FGD controlled boilers which do not monitor and report SO<sub>2</sub> CEMS data;
- 2) the possible Subpart D revision is not expected to become effective for at least one year;\* and
- 3) implementation of this guidance is not expected to create a measurable additional burden upon the applicable sources.

Therefore, agencies will benefit from having a CSA review method immediately available to them.

Furthermore, SSCD agrees that it may be appropriate to develop and disseminate more sophisticated guidance on CSA. Therefore, after the subject guidance is issued, and experience with it has been gained, SSCD will evaluate the technical feasibility and advisability of issuing new, more sophisticated, CSA guidance or procedures. If a decision is made to develop additional CSA guidance, your input and assistance will be requested.

#### B. Quality of CSA Data

One commenter expressed concern about the logic of expending agency resources to acquire and use what they construed were "uncertain data" to target enforcement activities when sources are, or will in the near future (the Region presumed), be required to submit quality-assured SO<sub>2</sub> CEMS data.

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\*Note: If EPA promulgates a revision of Subpart D which specifies various types of continuous monitoring (including CSA) as compliance methods, this guidance would cease to be applicable to the SO<sub>2</sub> emissions from Subpart D sources.



This guidance addresses sources which are not required to obtain CEMS data, but currently do have CSA data of sufficient quality to warrant their use in targeting enforcement activities. Since this guidance does not address CEMS data, SSCD deemed it appropriate to issue this guidance at this time. It should also be recalled that while striving to obtain readily available, high quality data, the quality assurance requirements for data used in targeting do not have to be quite as stringent as when the data are used directly to enforce an emission regulation. Furthermore, experience shows that agencies which take the following steps generally receive CSA data which are fully suitable to target boilers:

- ° make the purpose of the agency's CSA data acquisition program known to the source;
- ° request a corporate official's signature on each CSA data submittal;
- ° conduct agency inspections and/or reviews of the source's CSA equipment; and
- ° demonstrate to the source that the agency is using its CSA data to target enforcement follow-up actions.

#### C. Relationship of the Subject Guidance to CEMS/EER Guidance

In 1984, SSCD issued the document entitled "Technical Guidance on the Review and Use of Excess Emission Reports." That document addressed EERs derived from SO<sub>2</sub> CEMS. However, it recognized the need to develop and issue supplemental guidance to address those large coal-fired boilers which currently are not required to use SO<sub>2</sub> CEMS. The guidance contained in Attachment I is specifically intended to supplement the 1984 EER Guidance. Taken together, the 1984 EER Guidance and this document provide agencies with the procedures to target all large coal-fired boilers based upon SO<sub>2</sub>-related criteria.

The guidance provides specific forms and calculation methods to convert the source's coal sampling and analysis data into SO<sub>2</sub> EERs. Once such EERs are derived, it states that one should target and follow-up such data in a manner generally consistent with the procedures included in the 1984 EER Guidance.

D. Length and Complexity of the Guidance

Some of the commenters recommended that the final guidance should be simplified and streamlined in size. It became clear that this could be accomplished through the following two changes to the draft:

- 1) simplifying the calculation and technical details in accordance with the comments received; and
- 2) reorganizing and repackaging the guidance into two separate attachments.

IV. RESPONSES TO SSCD'S SPECIFIC CSA QUESTIONS

A. Agencies Should Obtain CSA Data from All "Compliance Coal" Subpart D Boilers

The commenters generally supported the idea that agencies should periodically obtain CSA data from every non-FGD-controlled (compliance coal) Subpart D boiler and other large boilers which are not presently using SO<sub>2</sub> CEMS, nor submitting SO<sub>2</sub> EERs.

Some Regional commenters stated that the preferred mechanism for obtaining quarterly CSA data is to request it by letter (e.g., §114), though other methods may be chosen by an agency.

With respect to which CSA data to obtain each quarter, the consensus was that, in general, it is important to obtain the summarized results of "as-fired" or "as-bunkered" CSA data derived from sampling the coal which is (or will be) combusted during each twenty-four hour period. Twenty-four hour CSA data are currently available from most modern boilers, and this period is consistent with those contained in the Agency's Proposed CSA Reference Method 19-A.

B. Agencies Should Take Into Account Data Uncertainties

Comments on this issue generally fell into four widely different viewpoints. These included: (1) do not use data which has an uncertain quality; (2) assume that the data values are high; (3) assume that data values are low; and (4) assume that the data are generally representative of the real level. SSCD recognizes that in a normal situation, there are likely to be as many causes for the CSA data to be high as there are for them to be low. Therefore, solely for the

purpose of targeting, if the source takes reasonable care in its CSA program, twenty-four hour CSA data are assumed to represent adequately the actual average (three to twenty-four hour) SO<sub>2</sub> emission potential of the coal combusted.

#### C. Preparation of CSA-derived EERs

The sentiment among the commenters was in favor of requesting the sources to submit CSA-derived EERs to the agencies on a quarterly basis, rather than having the agencies prepare the EERs in-house from "raw" source-submitted, daily data. The experience to date is that sources generally respond in the affirmative when requested to convert their CSA data into SO<sub>2</sub> excess emission reports. Furthermore, if the agency chooses to prepare EERs, it would require two submittals (or more) per quarter of data from the source. First it would receive "raw CSA data." Second, for every excess emission identified by the agency, the agency would require source submittal of concomitant process data. Therefore, the guidance strongly recommends that agencies request source submittal of its EERs.

#### D. Negative Reaction to Using "As-Received" CSA Data

The consensus opinion on the subject of agency use of as-received CSA data was opposed to generally accepting and using such data. The primary reasons for this position are:

- (1) there are usually no practical and simple ways to predict which day's SO<sub>2</sub> emissions a specific coal sample and its concomitant results represent;
- (2) allowing a source to rely upon its own as-fired or as-bunkered CSA data (in lieu of SO<sub>2</sub> CEMS) was seen by some commenters as providing a sufficient selection of alternatives to the source; and
- (3) many sources' as-received CSA hardware and test procedures do not meet the minimum acceptable criteria specified in the guidance and by ASTM.

Therefore, the consensus was that it would be inappropriate to "generally" accept as-received CSA data.

However, the commenters recognized that there might be some instances where reliance on as-received data would be appropriate. Therefore, the guidance accommodates, on a case-by-case basis (e.g., the sampling is consistent with

a twenty-four burn's "lot size," the emission rate is calculated to be far below the allowable rate, the coal is received from a single mine), agency evaluation of as-received data. Further, the guidance specifies that before accepting such data, the agency should be as confident about the resulting SO<sub>2</sub> EER as it would have been if it had relied upon either as-fired or as-bunkered data.

#### E. Targeting Criteria

The consensus of the commenters on this subject was that agencies should use targeting criteria for CSA-derived EERs which are comparable, if not slightly tighter, than those it uses for CEMS-derived EER results. The fact that a source uses a different SO<sub>2</sub> monitoring method should not measurably affect the agency's criteria. Therefore, with only the few modifications noted in Attachment I, the criteria included in the 1984 EER Guidance are appropriate when CSA data are used.

In summary, the comments received on the draft guidance urged that final CSA guidance be issued as soon as possible, incorporating relatively few major changes to the draft. SSCD intends to continue to support the program by issuing supplementary information and program guidance as necessary.

Since this guidance supplements and is conceptually and programmatically quite similar to the previous EER guidance, the following are true of the CSA guidance:

- ° it is issued as "technical guidance" rather than as "program guidance" in that it supports, but does not mandate, a review program;
- ° it is equally as important as CEMS targeting activities and, therefore, both should be implemented concurrently;
- ° there is a need for a limited period of source submittal of CSA-derived EERs to both State and Federal agencies, as in the case of the CEMS-derived EER data; and
- ° it is not applicable to any situation where CSA data are specified as the compliance method.

If your staff desires to distribute the attached guidance to Regional, State or industry personnel, additional copies may be requested from Louis Paley of this office. Requests should be sent to him at US EPA, SSCD (EN-341), 401 M Street, S.W., Washington, D.C. 20460, or by telephone at (202) 382-2835.



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Attachments I and II

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ATTACHMENT I

TECHNICAL GUIDANCE ON THE REVIEW AND USE OF  
COAL SAMPLING AND ANALYSIS (CSA) DATA

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ATTACHMENT I

TECHNICAL GUIDANCE ON THE REVIEW AND USE  
OF COAL SAMPLING AND ANALYSIS (CSA) DATA

I. Summary

The issuance of the October 1984 "Technical Guidance on the Review and Use of Excess Emission Reports (hereafter called the 1984 EER Guidance), as supplemented by this document, provides tools for agencies to obtain, review, and use EERs from all large coal-fired boilers except those where SO<sub>2</sub> continuous emission monitoring systems (CEMS) or CSA are the specified compliance methods. The primary objectives of these guidance packages are to provide the tools and procedures: (a) to document periodically the compliance status of those sources; and (b) to bring large boilers into continuous compliance with applicable SO<sub>2</sub> emission limits.

In conjunction with the previous guidance, this document presents step-by-step procedures, equations, and forms for agencies to follow when targeting boilers based on SO<sub>2</sub> data. This guidance permits agencies to address those boilers which were not previously addressed by the 1984 EER Guidance, and addresses boilers which do not use a flue gas desulfurization system, but instead rely upon "compliance coal" to achieve the relevant SO<sub>2</sub> emission limits.

The purpose of this guidance is to assist Regional Offices (and State agencies where such responsibility has been delegated) to proceed expeditiously and in a nationally-consistent manner with the review, conversion of CSA data into SO<sub>2</sub> excess emission reports (EER's) and, when appropriate, follow-up of such results. As shown in Figure 1, use of CSA-derived EERs should be similar to that of the CEMS-derived ones.

This document recommends that agencies give priority attention to reviewing and selectively following-up source-submitted, CSA-derived EERs in order to obtain the greatest degree of SO<sub>2</sub> emission reduction from assuring compliance by coal-fired boilers. It recommends that agencies use CSA data which the boiler operator obtains as a result of fixed-frequency sampling by a mechanical device, and which represent the

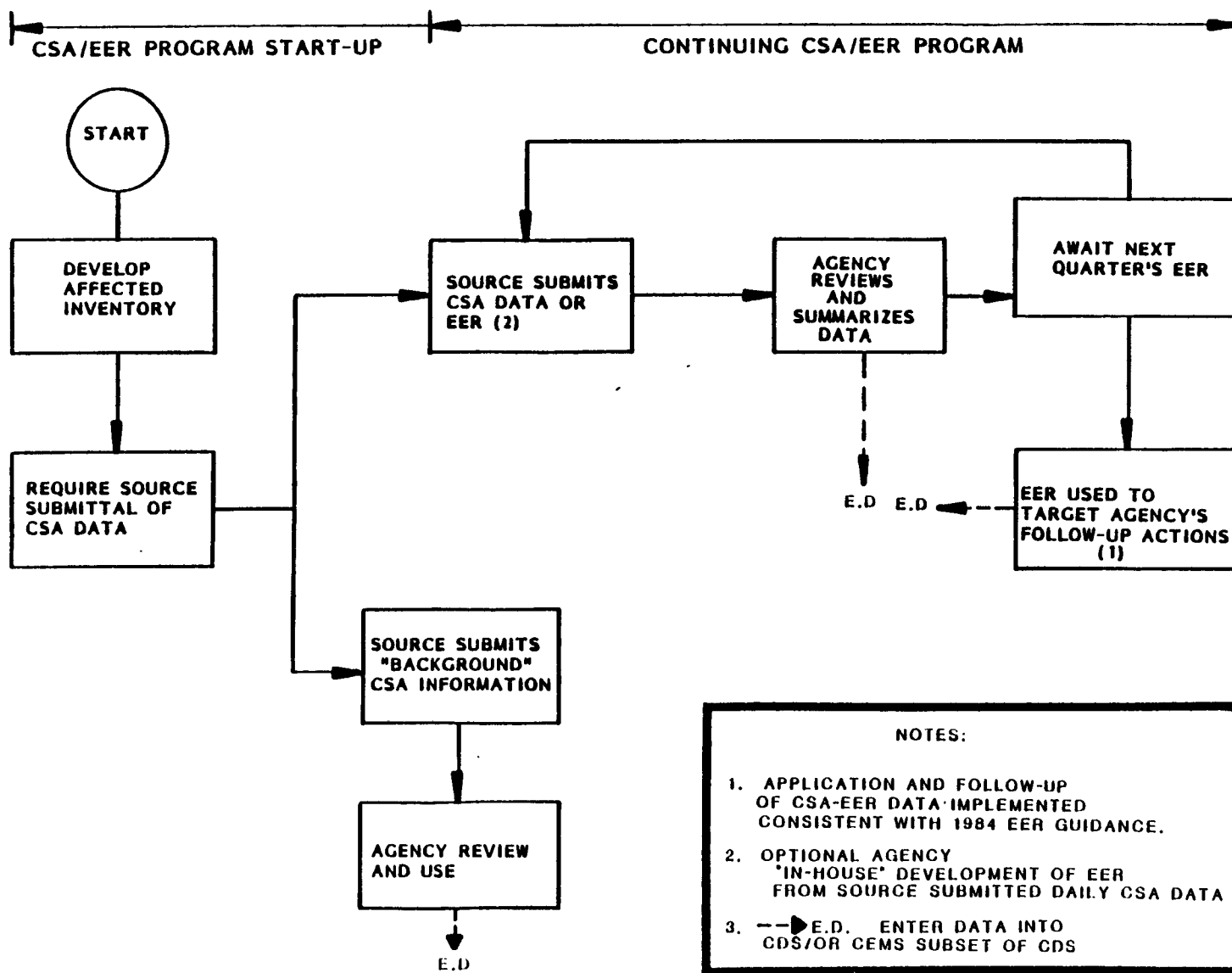


FIGURE 1. AGENCY'S PROGRAM FOR REVIEWING AND USING CSA-DERIVED EERs.

quantity of coal normally combusted by the boiler in a twenty-four hour period. Agencies should rely primarily upon "as-fired" and "as-bunkered" CSA data.\* However, if such data are not readily available, the procedures recommend that the agency determine whether it is prudent for it to rely upon other available, but less-suitable CSA data (e.g., data representing several days of coal combustion, "as-received" CSA results), or to require source submittal of acceptable SO<sub>2</sub> data. Agencies should request that their (CSA-guidance-affected) sources summarize and report quarterly two types of information: (a) the failure to acquire CSA data; and (b) the occurrence of SO<sub>2</sub> excess emissions. However, of course agencies have the option to derive such reports in-house from source-submitted "raw" (e.g., daily monitoring performance and daily fuel analysis data) CSA results if they prefer.

Each quarter, summarized EER results should be used to target those "outlier" boilers which exceeded the agency's CSA monitoring performance and/or excess emission rate criteria (e.g., a large total duration of missing or inadequate CSA data, a large total duration of excess SO<sub>2</sub> emission periods).

The guidance indicates that the agency's criteria for taking follow-up action based on EER data should strike a balance between factors such as the agency's resource availability, the best performance shown (or expected) by the subject class of sources, and its priority for obtaining compliance by such sources.

## II. An Agency's CSA Data Requirements

Agencies require three types of information in order to implement a CSA/EER "review and follow-up" program. First in importance, though probably least responsible for obtaining SO<sub>2</sub> emission reductions and compliance, is an inventory of sources to which this guidance applies. The agency can obtain this information quite simply as described below. However, though a complete inventory is helpful, the agency should implement its CSA/EER activities even before it completes its inventory.

---

\* "As-fired" and "as-bunkered" coal sampling are performed at a location near or downstream of the specific boiler's short-term coal storage area (bunkers, silos). In contrast, "as-received" coal sampling is performed at a location between the facility's coal receiving location and the specific boiler's long-term storage area (e.g., coal pile).

Each agency also needs specific hardware and methodological information about each boiler's CSA program. Such information will generally be necessary "background" data and support the agency's use of quarterly CSA-derived EERs.

Last, but most importantly, are source-submitted quarterly summaries of periods of missing CSA data and periods of SO<sub>2</sub> excess emissions.

Each of these are discussed further in the following paragraphs.

A. Develop an Inventory of CSA Guidance-affected Sources

An inventory of CSA Guidance-affected boilers can be developed simply by taking the following steps:

- 1) define the universe of coal-fired boilers from which the agency desires to receive periodic SO<sub>2</sub> emission rate/EERs; and
- 2) remove from the list those which are FGD-controlled and which are (or should be) submitting periodic CEMS-based information to the agency.

The remaining boilers should comprise the CSA Guidance-affected inventory.

B. Characterization of the CSA Program and Fuel

As noted above, the two general types of CSA data which must be obtained from a source are:

- (1) physical equipment and methodological ("source CSA program") information; and
- (2) parametric data representing the coal combusted during each twenty-four hour period.

Both types of CSA information should be readily available from the boiler operator. As one can see in Appendix 1, the background data are limited in quantity. Furthermore, one would expect a boiler operator to acquire no more than ninety sets of CSA "emission" data, and even fewer CSA monitoring performance data points per quarter (see Appendix 2). Additional details on each of these types of CSA data are provided.

1) General characterization of a source's CSA program

Agencies need certain background information (generally unchanging) in order to properly characterize and use the daily fuel data. This information includes where and how the samples were taken and which analytical methods were used. Appendix 1 presents an example list and format for recording and organizing such information. It is expected that the agency will acquire and enter this type of information into the Subset of CDS only once.

2) Characterization of the fuel combusted daily

For each boiler, agencies should have CSA parametric data which represent the coal burned during each twenty-four hour period. One can be quite confident, statistically, in the daily calculated SO<sub>2</sub> emission rates and the resulting EERs, if one has results:

- ° representing at least 85% of the boiler operating days (BODs) during the quarter;\*
- ° from as-fired or as-bunkered coal sampling;
- ° from sampling that was performed by a mechanical device which met ASTM D-2234 Type I, Conditions B and C and Systematic Spacing (evenly spaced increments);
- ° from analyses that were performed using methods which conform to ASTM D-2013 for sample preparation, D-3177 for sulfur analysis, D-3173 for moisture analysis, and D-2015 for gross calorific value; and
- ° that were reported to the nearest five hundredths (0.05) of a lb. SO<sub>2</sub>/10<sup>6</sup> Btu.

It is highly recommended that an agency accept, as an alternative to SO<sub>2</sub> CEMS data, only CSA data which conforms to the aforementioned list of key characteristics. If the agency chooses to give further consideration to non-conforming CSA data, it should require the source to demonstrate that such data will provide the agency with a sufficient basis for targeting. In these circumstances, the agency should take account of items such as the source's proximity to the emission limit and the requirements which it has imposed on other, comparable sources.

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\* A "boiler operating day" is used in this guidance to mean a twenty-four hour period during which any coal is combusted in the steam generating unit.



### III. CSA Data Acquisition

An agency must acquire sufficient CSA data before it can effectively implement a CSA targeting program. Generally, this will require only a one-time acquisition of the background information from each of the boilers, in addition to a quarterly acquisition of the source's EER as shown in Appendix 2.

The preferred, most resource-effective method for agencies to obtain such data is by a letter. Use of a formal (§1114) or informal letter would be appropriate. However, if the agency prefers, it may obtain the information in alternative ways such as during an on-site visit of the facility.

#### A. Format and Detail of the Source's CSA Program Characterization Data

Background data can be acquired quite effectively by requesting a source to complete a form like Appendix 1.

#### B. Format and Detail of the Source's Quarterly Summary Excess Emission Reports

It is strongly recommended that an agency request each of its affected sources to prepare and submit quarterly summarized SO<sub>2</sub> excess emission reports. They should be able to prepare such reports from normally available business data. Alternatively, at the discretion of each agency, it may request source submission of quarterly reports containing daily data (e.g., the CSA data acquisition rate and sulfur and heat contents of the coal), and the agency prepares each EER in-house.

The primary advantages of requesting each source to prepare and submit its own summary EER, rather than the agency preparing them, are:

- ° it will likely minimize the resource burden upon both the source and the agency (e.g., a single submittal of information, versus possibly two or more per quarter, should normally suffice);
- ° it should increase the likelihood that each source will obtain and use such results to take any necessary corrective actions; and
- ° it may increase the accuracy of the EERs.

Agency experience in requesting EERs from sources has been generally positive since such requests are not unduly burdensome.

#### IV. CSA Data Evaluation Procedures

##### A. Evaluation of the Source's CSA Program Characterization Data

The background information received by an agency should be evaluated to help it determine whether the source meets the agency's criteria for an acceptable CSA program (e.g., if it represents twenty-four hours of combustion, sampling is "as-bunkered"), and help establish the credibility of the agency's targeting results.

##### B. Evaluation of the Periodic Data - General Information

The evaluation procedures described in this Section are conceptually similar to those presently used by industry when converting CEMS data into SO<sub>2</sub> EERs. As noted previously, preferably the source (but possibly the agency) performs the calculations and evaluations to derive its quarterly SO<sub>2</sub> EER. The CSA-derived EER is completed by taking the following steps:

- ° evaluate whether there are sufficient data to derive an EER;
- ° identify and record each boiler operating day when insufficient CSA data were acquired, or where CSA hardware or methodology was modified;
- ° calculate the daily SO<sub>2</sub> emission rates; and
- ° compare each daily emission rate value with the applicable emission limit to identify periods when the emission rate exceeded the limit.

Note that no sulfur retention credit (SRC) should be used at this stage of data evaluation. The agency may subsequently choose to account for any sulfur retention during the targeting phase of the analysis. See the discussion presented on this topic in Section VI, B, 2 of this document. Therefore, the reviewer should take steps to ensure that the source did not use a SRC when converting its data to daily SO<sub>2</sub> emission rates.

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C. Specific Procedures for Converting Daily CSA Data into SO<sub>2</sub> Emission Rate Data

This Section provides a step-by-step explanation of how to convert daily CSA data from paired-analytical results to emission rate data, and how to verify source-submitted emission rate data.\*

Step 1: Evaluate and record the completeness and the quality of the data (as recorded on Items I and II of Appendix 2).

Step 1A:

The reviewer should evaluate and record whether the data currently available within the organization are sufficient in terms of completeness, timeliness, quality, and known sulfur retention credit. Criteria which the reviewer should use include:

- (a) "sufficiently complete" meaning have CSA data representing at least 85% (unless otherwise stated in a regulation, etc.) of the boiler operating days during the quarter;
- (b) "sufficient timeliness" meaning that the data are representative of the quarter of interest;
- (c) "sufficient quality" meaning that the CSA results are from an as-fired or an as-bunkered CSA system; and
- (d) it must be known whether the data included a sulfur retention credit; and if it did, how much.

The reviewer should use a form, comparable to the one included as Appendix 2, to organize and record the available data.

If the available data are not sufficient to derive the EER, then Item III, B, of Appendix 2 should be used to summarize what additional information are required and what mechanism should be used to help ensure the acquisition of sufficient data. The reviewer should record the recommendation for follow-up, and sign and date the form at the top of the cover page.

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\*Note: Attachment II contains an example of an actual agency review of such data.

Note: The reviewer should not attempt to evaluate the data further, or to go on to Items III (C-H) of Appendix 2 until the required additional data are obtained.

Step 1B:

The first reviewer's supervisor should check the initial findings and recommendations, regardless of whether or not additional data are required. If additional data are not required, the reviewer should skip to Step 2. If the reviewer's supervisor (or other designated person) agrees that additional data are required, he should sign and date the form on the top of the cover page and in Item III, G.\*

Step 1C:

If additional data are required, Appendices 1 and 2 should facilitate the acquisition and organization of such additional data. Such data should be obtained, evaluated for completeness (repeating Steps 1A and 1B), and then used as described below to derive a SO<sub>2</sub> EER.

Step 2: Record the source's CSA monitoring performance.

Recommendation: The agency should require the source to perform this Step.

Step 2A:

If there were any periods, during the subject calendar quarter, when the CSA monitoring equipment malfunctioned or was inoperable, or for other reasons sufficient CSA data (e.g., 85% of the boiler operating hours in a boiler operating day) were not acquired, this fact should be noted in Item II, A of Appendix 2. The total number of BODs thus affected during the quarter should be recorded in Item II, A, 1.

Note: If available data are in terms of SO<sub>2</sub> emission rates (e.g., lb. SO<sub>2</sub>/10<sup>6</sup> Btu), go directly to Step #4 below:

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\* This guidance presumes that the size of the organization and volume of CSA data being evaluated may warrant a two-level review of the CSA data. If that is the case, implement Step 1B.

Step 3: Convert the paired sulfur and heat content results into daily SO<sub>2</sub> emission rate data.

Recommendation: The agency should require the source to perform this Step.

Step 3A:

If any of the available CSA data delineated in Items I and II of Appendix 2, are incomplete or inconsistent with this guidance (e.g., both sulfur and heat content data must be on the same basis), additional or revised information should be obtained or the results recalculated, as necessary, before the reviewer proceeds to calculate the daily SO<sub>2</sub> emission rates.

Step 3B:

Whether the results have been adjusted to account for a sulfur retention credit (SRC) must be known. To the extent that there were any adjustments (credits) of the data, such data should be recalculated to remove the adjustments. One can use the following equation to remove any sulfur retention credit adjustment while converting the CSA data (%S and GCV) to SO<sub>2</sub> emission rate data.\*

$$E = \frac{(2.0 \times 10^4 (\%S))}{(\text{GCV})} \times \frac{(100 + \text{SRC})}{100}$$

Where: E = daily emission rate  
(lb. SO<sub>2</sub>/10<sup>6</sup> Btu), to be  
calculated within 0.05 lb.  
SO<sub>2</sub>/10<sup>6</sup> Btu.

S = unadjusted (for SRC) daily  
average sulfur content in  
coal (% by wt., dry basis).

GCV = daily average gross calorific  
heat content of coal (Btu/lb.,  
dry basis).

SRC = any unauthorized sulfur retention credit  
accounted for in the sulfur or heat  
content values (%).

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\* Equations such as the one given here are provided solely to clarify and simplify use of this guidance. Other equations may be developed and used by the reviewer.

Note: During such calculations no sulfur retention credit is to be used when converting CSA data to daily SO<sub>2</sub> emission rates. See Section VII for a discussion of whether any SRC should be granted during the agency's targeting of specific boilers.

Step 3C:

One might record the daily emission rate data in a column next to the %S and GCV as shown in Item III, B of Appendix 2. When the results are recorded, also record which organization performed the calculations (e.g., agency reviewer or source reviewer) in Item III, B, 3.

Note: If the available data are in terms of "paired analytical results", skip Step #4 and go directly to Step 5.

Step 4: Verify and record the source-submitted values of the daily SO<sub>2</sub> emission rates.

The key points that should be checked when the available CSA data are submitted in terms of SO<sub>2</sub> emission rates are: whether any sulfur retention credit was used; and whether the calculations were performed correctly. This can be determined as follows.

Step 4A:

Check to see if a positive statement that "no SRC" was incorporated in the SO<sub>2</sub> emission rate data. One must determine what, if any, SRC was used before continuing. If a sulfur-retention credit was applied, use the following equation to correct (increase) each daily data point to "no SRC baseline" results.

$$E = E_{\text{SRC}} \times \frac{(100 + \text{SRC})}{100}$$

Where: E = daily emission rate, without SRC (lb. SO<sub>2</sub>/10<sup>6</sup> Btu), to be calculated within 0.05 lb. SO<sub>2</sub>/10<sup>6</sup> Btu.

E<sub>SRC</sub> = unauthorized, SRC-adjusted daily emission rate.

SRC = sulfur retention credit (in %).

Therefore, one should increase each available emission rate value by the factor:  $\frac{(100 + \text{SRC})}{100}$ .

Step 4B:

If concurrent paired analytical and emission rate data are available, randomly select a few data sets to audit the source-submitted SO<sub>2</sub> results. This is done by calculating a few daily SO<sub>2</sub> emission rate values. If the audit results do not agree with the available SO<sub>2</sub> data, check further to determine the cause (e.g., SRC used, miscalculation) of the discrepancy. As necessary, recalculate the entire quarter's emission rate values.

V. Completion of an SO<sub>2</sub> Excess Emission Report

After completion of Step 3 or 4, as appropriate, the data are at a stage generally comparable to the recorded output of a SO<sub>2</sub> CEMS. As in the case of a CEMS-derived EER, a CSA-derived EER must include two types of data. These are:

- ° information on each instance that the boiler operator failed to obtain suitable CSA data; and
- ° information on each instance that the boiler operator failed to keep the SO<sub>2</sub> emissions below the relevant emission limit.

Furthermore, as in the case of the CEMS-derived EER, after the CSA-derived EER data are recorded, it is recommended that one summarize the data further (e.g., total duration in the quarter when CSA data were not available, or total duration when the daily SO<sub>2</sub> emissions exceeded the emission limit). A summary will facilitate the subsequent uses of the results such as targeting, trend analysis, and performance comparisons with other boilers. The following Steps should be taken when preparing and summarizing EER data.

Step 5: Evaluate and record the source's CSA monitoring performance (data quality and availability).

Recommendation: The agency should require the source to perform this Step.

Step 5A:

Evaluate the adequacy of the source's CSA data acquisition program based upon the equipment, methodological, and data acquisition information provided (by the sources) on forms such as those in Appendix 1 and Item II, A of Appendix 2, respectively.

Step 5B:

Record the results of the evaluation on a form such as that given in Appendix 2, Items III, A and E, 1.

Step 5C:

To the extent that the evaluation identifies substantial deficiencies or problems with the data (e.g., data availability is less than 85% of the boiler operating days) additional data should be acquired and/or corrective actions should be initiated (see Section VII for a further discussion of possible corrective actions). Item III, B of Appendix 2 may be used to recommend what type of data should be obtained and how the organization should obtain it.

Step 6: Convert and record the daily SO<sub>2</sub> emission rate data into excess emission data.

Recommendation: The agency should require the source to submit a summarized EER (e.g., like Appendix 2).

Step 6A:

Compare each daily emission rate value (II, B, 4 of Appendix 2) with the relevant value of the SO<sub>2</sub> emission limit in order to identify each period of excess emissions. This can be done quite simply by scanning through the list of reported SO<sub>2</sub> emission rate data. Each time the daily emission rate exceeds the limit, by any amount, annotate the list (in Item II, B, 4) and record (in Item III, E, 2 of Appendix 2) the following information:

- ° date of the excursion;
- ° magnitude of the emission rate;



- ° the reason for the excess; and
- ° the corrective action reported.

Step 6B:

Count the number of reported periods of SO<sub>2</sub> excess emissions ( $n_{ex}$ ) and record this total number in Item III, E, 2, b of Appendix 2.

Step 6C:

Calculate the total duration ( $d_{ex}$ ) of BODs during which the boiler exceeded the SO<sub>2</sub> emission limit by multiplying the number of excess emission periods ( $n_{ex}$ ) by twenty-four hours. Record the total duration when the boiler exceeded the emission limit ( $d_{ex}$ ) in Item III, E, 2, c of Appendix 2.

Step 7: Complete the EER and recommend follow-up.

Recommendation: The agency should require the source to submit a summarized EER (e.g., like Appendix 2)

Step 7A:

Review the emission performance information and determine whether it was generally adequate. Record the answer in Item III, E, 3 of Appendix 2.

Step 7B:

Record the name, affiliation and telephone number of the reviewer(s) in Item III, F.

Step 7C:

Determine if any organizational (agency, industry) follow-up action should be performed. Record this determination, and sign and date the top of the cover page.

Step 7D:

(Industry only) certify the representativeness of the EER data by completing Items III, H, (1) and (2).

In summary, an adequate CSA-derived EER should contain the following major components:

- ° general information about the boiler, coal sampling and analysis equipment, methodology, and reporting period;
- ° CSA monitoring performance data;
- ° daily CSA or SO<sub>2</sub> emission data;
- ° summary monitoring performance and excess emission results;
- ° recommendations for any follow-up actions;
- ° reviewer's signature(s); and
- ° (if source submitted) source certification of the data.

VI. Agency Review, Summarization and Entry of CSA-derived EER Data\*

Agency use of EERs to target "outlier" sources (compared to other sources) is a most effective means of motivating sources to achieve continuous compliance. Therefore, it is highly recommended that agencies prioritize their resources and program emphasis by requesting source submittal of summarized CSA-derived EERs (again, even if the reports are less than perfect).

If source personnel prepared the EER, the agency should review it before summarizing and using the data. Whether source or agency personnel prepared the CSA-derived EER, agency personnel should summarize and enter that data into the CEMS Subset of EPA's Compliance Data System (CDS).

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\* The following comments and those contained in Attachment II assume that the agency requires source submittal of the CSA-derived EER within thirty days after the end of each calendar quarter, and in a manner generally consistent with Appendix 2.

Assuming that source personnel derived and submitted the EER (in a form comparable to Appendix 2) to the agency, the agency reviewer should evaluate, summarize and record the following information on a form such as illustrated in Appendix 3:

- ° administrative details
- ° adequacy of the source's CSA data acquisition and reporting performance; and
- ° adequacy of the source's emission compliance program.

Appendix 3 presents an example form (modelled after the one included as Appendix A-1 in the 1984 EER Guidance) which should facilitate agency review, summarization and preparation for data entry.

In the event that agency personnel derived a source's EER, use of Appendix 3 will facilitate the agency's input of the quarterly EER data into the CEMS Subset of the CDS. At a minimum, some of the data contained in Item III of Appendix 2 should be summarized prior to data entry into the Subset of the CDS.

The recommended analysis and follow-up procedures are presented in this document (as in the 1984 EER Guidance) as a three-phase process as follows:

- ° Phase 1 - initial review and summarization of EER data;
- ° Phase 2 - confirmation of Phase 1 results, targeting of sources for follow-up, and data input to the CEMS Subset of the CDS; and
- ° Phase 3 - conventional enforcement follow-up evaluation using CSA data and other emission and process data; this phase may result in recommendations for additional testing or compliance/enforcement actions.

All EERs must be subjected to Phase 1 and Phase 2 evaluations. Evaluations performed during these two phases are unique to EERs derived from CSA and CEMS data.

Phase 3 of the EER review and follow-up process represents a conventional agency follow-up to data which have identified a possible violator.

Experience has shown that each EER should be processed "sequentially" as it is received, since the EERs usually arrive at the agency individually and since they are usually assigned to different case engineers. Also, it appears to be most beneficial for the agency to enter the new compliance data into its data base management system (e.g., CDS) at major milestones during the three phases. The phases are described in more detail below.

A) Phase 1 - Screening Assessment and Summarization of the Data

During the Phase 1 evaluation, the reviewer is to perform a preliminary evaluation of the data and (if not already done by the source) to summarize the data into specific categories for subsequent entry into the CEMS Subset of the CDS. A few Regional Offices have found that this can be very effectively done by para-professionals or technicians, and that it takes on the average about an hour per EER. The following paragraphs provide additional details about Phase 1 activities.

Step 8: Assess and record the completeness and general acceptability of the EER.

Review the EER and complete Items 1 to 4 on the "EER Reviewer's Checklist". This assessment should compare the EER data with the following requirements. While each item is required, it is important to remember that the key to effective use of EERs is to concentrate on whether the source acquired and reported an adequate quantity of CSA data, and whether its emissions remained below the emission limit.

(a) The source should submit EERs as follows:

(1) Within 30 days after the end of each calendar quarter, submit a written report of: (a) any failure of the CSA monitor system to acquire data during a BOD, and any modification or major repair of the CSA system; (b) excess emissions (as defined in the applicable regulation).

(b) An EER is required every quarter, even if no excess emissions were recorded or if the CSA data acquisition system had no downtime, and was not repaired or modified.

(c) Each EER shall include:

- (1) The date, start and ending times of each instance when the CSA data acquisition system was inoperative, and a description of the nature, cause and corrective action taken for each such period.
- (2) The magnitude (including any conversion factor(s) used), date, start and ending times, nature, cause and corrective action taken for each excess emission; specific identification of each period of excess; and the nature and cause (if known) of the corrective actions taken.
- (3) The number of days in a quarter (or percent of time) when the CSA data acquisition system was operating at the same time the process was operating.\*

Step 9: Summarize and record the CSA monitoring and emission performance data.

Before the EER data can be entered into the CEMS Subset, and effectively used, the data must be summarized. To the extent that the EER data are not summarized by the sources in a manner consistent with the definitions shown in Item 5 of Appendix 3, the agency reviewer must summarize the data. The two key parameters which must be summarized by "reason code" are:

- (a) total number and duration of individual CSA data acquisition system downtime incidents; and
- (b) total number and duration of individual exceedance periods.

Record the results in Item 5(a) and 5(b) of Appendix 3.

It is recognized that if the agency reviewer were to summarize the EER data, it would be the most resource intensive element of the Phase 1 analysis. However, summarization of

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\* This item is only implicitly specified in §60.7. However, it is essential for agencies to know the quantity of CSA data acquisition system downtime while the process was operating in order to determine the adequacy of the source's monitoring performance and the representability of the excess emission data reported in the EER.

the data is critical to the effective use of EERs. Therefore, it is strongly recommended that the agency require its sources to report their data in a summarized form.

B) Phase 2 - Verification of Phase 1 Results, Targeting of Sources, and Data Entry into the Subset of the CDS

The Phase 2 EER activities should be performed by an experienced compliance person. To date, agencies have largely relied upon a professional who was familiar with reviewing other compliance data. This part of the EER assessment is more complex than Phase 1 in that it involves: 1) completion of an internal audit and concurrence with the Phase 1 results; 2) supervision of EER data entry into the CEMS Subset of the CDS; and 3) comparison of the EER data with agency targeting criteria, and in some instances includes recommendations for additional agency evaluation of source-related data. Current experience indicates that Phase 2 activities can be completed within about one hour. The following paragraphs provide additional details about Phase 2.

Step 10: Supervisory verification and concurrence with Phase 1 results

The supervisor should review the results of the Phase 1 evaluation as recorded in Items 1 to 5 of Appendix 3.

Step 11: Supervision of entry of summarized EER data into the CEMS Subset of the CDS.\*

At least once per quarter, the supervisor should insure that the summarized EER data, targeting results and follow-up recommendations are entered appropriately and in a timely fashion. The supervisor should also insure that the source is notified about these results. This will help to promote better emission control and monitoring of operations by the source because they will be aware that the data are being scrutinized and will not want their EERs to trigger agency follow-up activity. Furthermore, providing the results to the sources will improve the credibility of the agency's CSA and EER processes.

Completion of these data entry activities should be recorded in Item 6 of Appendix 3.

1) Considerations to be made prior to targeting sources

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\*Procedures for CSA data entry will be subsequently furnished by SSCD as part of the CDS program.

In general, one should not expect a quantitative, predictable relationship to exist between the CSA-derived and CEMS-derived EERs, particularly on a short-term averaging basis because of the impact of the following items:

- (a) two vastly different measurement methods;
- (b) two physically different streams (coal, exhaust gas) are being measured; and
- (c) the differences in sampling and data averaging times between the two types of data.

Therefore, if one were to quantitatively compare the SO<sub>2</sub> emission rates from two different boilers (one obtained by CSA, and one by CEMS) and found the CEMS-monitored boiler had a greater frequency of excess emission periods, one should not necessarily conclude that only the CEMS-monitored boiler should be targeted for agency follow-up. Because there isn't a linear relationship between short and long-term emission data, one cannot convert the results obtained by CSA to those by CEMS simply by multiplying the total duration of CSA-derived excess emission periods by eight (e.g., eight discrete three hour (CEMS) periods per twenty-four hour (CSA) day), or by twenty-four (e.g., twenty-four rolling three hour periods per twenty-four hour day).

Based upon limited data and experience, one should expect that results based upon data acquired during a twenty-four hour period will measurably "understate" the magnitude, as compared to data acquired over a three-hour period. A preliminary estimate of this difference might be 10-20% (e.g., 24-hour number is 1.0 versus a 3-hour number of 1.2).

Although one should not quantitatively compare the EER results obtained from CEMS and CSA, one can meaningfully compare the results from different boilers as long as they were all monitored by the same method. Therefore, agencies can use both types of data in parallel, yet separate evaluations, to target sources for agency follow-up activities.

## 2) Consideration of a potential sulfur retention credit (SRC)

As noted previously, the SO<sub>2</sub> emission rate and EER data calculations up to this point must not take account of the potential quantity of sulfur "retained" in a non-oxidized form (e.g., not converted to SO<sub>2</sub>). As a point of departure

on this, the Agency has received data indicating (or claimed to indicate) that the sulfur retention was 0-100%, however, the most credible estimates range from about 1-30%, depending upon many physical and chemical phenomena.

It is SSCD's opinion that the actual retention of sulfur will usually not affect the agency's use of CSA-derived EERs.\* This opinion is based upon the following points: (1) bituminous coal has negligible sulfur retention ( $< 2.5\%$ ); (2) many boiler operators intentionally operate so that their emissions will be measurably (at least 10%) below the  $\text{SO}_2$  emission limit; and (3) although coal which has a high sodium content (e.g., low sulfur western coal) may have a sulfur retention rate of 20-30%, usually the  $\text{SO}_2$  emissions from such low sulfur coal are inherently well below the limit. Thus, sources burning low sulfur coal which has a high sodium content will normally be in compliance even without receiving any "credit" for sulfur retention.

As a first approximation, it is believed that the impact (lower values) of using twenty-four hour data to represent a short-term emission standard is offset by the potential impact of sulfur retention associated with the combustion of most types of coal (except for the low sulfur/high sodium coal mentioned above). Therefore, it is recommended that agencies grant no SRC to a source unless the source, on a case-by-case basis, quantitatively and empirically demonstrates that measurable ( $>>10\%$ ) sulfur retention actually occurs at the boiler. Furthermore, to the extent that any SRC is granted, it should be conditioned upon: (a) the source conducting annual tests to quantify the sulfur retention rate; and (b) the source notifying the agency about any changes in coal suppliers or coal characteristics which might affect the magnitude of their sulfur retention.

Step 12: Selectively target and record outlier sources for follow-up.

The basic concept behind agency EER review and targeting procedures is to separate all CSA Guidance-affected boilers into three groups: (a) those that clearly are above the emission limit, and should receive the agency's priority attention; (b) those that are clearly well below the limit, and definitely do not warrant agency follow-up; and (c) those which have emissions near the limit and which may warrant, and may receive (depending on resource availability), agency

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\* Note that CEMS-derived EERs, by virtue of being based upon  $\text{SO}_2$  emission measurements, inherently "take into account" any sulfur retention which may have occurred in the process.



attention. Thus when the agency completes its selective targeting, it will have a reasonably quantitative basis for focusing its resources upon those few sources which are most out of compliance and have the potential for providing the largest emission reduction.

The agency, by judiciously selecting its criteria, will likely confirm (in Phase 1) that most of its boilers were in compliance with the monitoring and emission limits. Therefore, few of its boilers will be targeted. However, as a "quality assurance" check on the agency's EER review procedures, and to verify the data (to the extent that resources permit) the agency should randomly target a few of those "apparently complying boilers" for follow-up action.

Compare the Phase 2 results to the agency's targeting criteria. See the sample list of criteria and follow-up actions presented in Section VII. Also see Attachment II for an example of an agency's review and use of some empirical data.

Record the targeting results and recommendations for agency follow-up in Item 7 and on the top of the cover sheet of Appendix 3.

Step 13: Revise, if appropriate, the source's compliance status in the CDS.

If a source has been targeted for follow-up action, the source should take corrective actions and the agency should subsequently reassess the source's performance and compliance status. Traditionally in circumstances similar to those which warranted the source being targeted, agencies have "flagged" the source by recording its compliance status in CDS as being in "non-compliance".\* Once the reviewer confirms that the correct source compliance status is stored in the CDS, he completes Item 8 of Appendix 3.

#### C) Phase 3 - Conduct Conventional Enforcement Follow-up Activities

Phase 3's conventional enforcement analysis and follow-up actions should be performed on a more manageable, smaller fraction of the sources. Such activities should be more comprehensive and more sophisticated than the activities performed on the larger quantity of sources reviewed in Phases 1 and 2.

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\* Other flagging techniques may also be considered.

Once a specific source has been targeted as a possible violator (during Phase 2), the agency should proceed as it normally would whenever it has reason to believe that a source may be out of compliance. As with any conventional follow-up activity, Phase 3 may be performed in the office or in the field. It may include activities such as comparison of the EER results with other available data (e.g., malfunction reports, inspection reports, and stack test results), and compliance activities which result in the acquisition of new data. Furthermore, the Phase 3 assessment may result in initiation of an enforcement action. Therefore, it is suggested that a professionally-trained person perform these activities.

Phase 3 activities may also result in:

- ° a determination that an "apparently complying" source, based upon conventional surveillance/compliance monitoring data, actually is in violation of one or more regulations; or
- ° a determination that "an apparently violating" source, based upon the CSA-derived EER data, is actually in compliance.

Regardless of the outcome, the agency's confidence in its compliance data on that source will be measurably enhanced.

#### VII. Example Targeting Criteria and Recommended Agency Follow-up Actions

The following example criteria (e.g., < 2% = no action; > 5% = definite follow-up action) and follow-up actions are based on recent Regional Office experience, largely with EERs from large boilers. They are intentionally non-specific in order to provide a framework or "starting point" for each agency to formulate its own criteria and recommended follow-up actions which are specifically suited to its unique set of circumstances. It is suggested that an agency consider, among other parameters, the following items when developing its criteria for targeting sources:

- ° agency staff size and expertise, relative to the size and complexity of its responsibilities;
- ° availability of external resources (cooperating agencies, contractor assistance);

- ° current level and quality of agency knowledge of its source's emissions, control systems, processes, fuel alternatives, etc.;
- ° compliance and malfunction history of its sources; and
- ° relative priority of the sources and the pollutants addressed by the criteria.

When an agency is considering which targeting criteria to utilize, it will be helpful to recognize that the criteria define the level(s) at which the agency will take certain actions. Therefore, it is logical to establish the criteria at values which "balance" the previously-listed parameters. For example, if an agency decides to increase its priority for bringing certain sources (or category of sources) into continuous compliance, its currently available resources could be "targeted" for such sources simply by tightening the criteria for initiating action against the priority sources (e.g., reducing the quantity of excursions permitted by an agency before it initiates some form of enforcement follow-up action). Similarly, once source compliance with a regulation reaches a desired level, an agency would find fewer sources exceeding the criteria, thus permitting it to shift some of its resources to other areas.

In summary, each agency should select one or more criteria (e.g., 2%/5% criteria) for selectively initiating follow-up actions. The criteria should be used as the "benchmark" to which each EER should be compared. In this manner, the agency's CSA and continuous compliance programs will be implemented uniformly and equitably. Furthermore, each agency should review its criteria and follow-up plans at least annually, and revise them as necessary.

#### A) General Comments on the Example Criteria

The following additional comments are relevant to understanding and using the example "Criteria for Action" and "Recommended Follow-up Actions" provided in the following pages.

- ° Of the three types of criteria provided (i.e., CSA Monitoring Performance, Emission Performance, and Administrative Performance), "Emission Performance" is clearly the most important. However, the urgency and magnitude of follow-up to CSA Monitoring or

Administrative Problems should be controlled by the degree to which monitoring, EER or administrative deficiencies themselves inhibit interpretation and use of data relating to compliance with SO<sub>2</sub> emission limits. For example, major gaps in data from a problem source, or chronic monitoring deficiencies would warrant the strongest enforcement response. On the other hand, format problems presenting only a minor inconvenience to the reviewer might only warrant a low level follow-up action such as a phone call or form letter.

- ° Whenever a detailed review of exceedances occurs, a concurrent review of the source's CSA monitoring performance should also be completed. Check next quarter (whether or not the threshold point is reached) to determine whether similar problems reoccurred, and whether the source's previous corrective action was acceptable.
- ° Every EER submitted should receive the agency's timely review, be summarized (if necessary), be added to the agency's data base management system and, if appropriate, followed-up by surveillance or enforcement actions.
- ° The example criteria provided are not intended to suggest that an agency's criteria should or could all be precisely definable (e.g., 2% missing CSA data).

The criteria provided are for illustrative purposes.

Furthermore, it should be noted that regardless of the SO<sub>2</sub> monitoring method, and even though CEMS and CSA methods may "appear" to give different results for the same emissions, the actual SO<sub>2</sub> emission rate and total duration of SO<sub>2</sub> excursions will be the same. Therefore, agencies should use similar criteria and range of follow-up actions for both CEMS and CSA-derived EERs.

B). Example Criteria and Recommended Follow-up Actions  
(CSA Data Acquisition Deficiencies)

<u>Criteria for Action*</u>	<u>Recommended Follow-Up Actions</u>
Total duration of missing or insufficient CSA data was below the low threshold point.**	Regardless of results, the source should at least be <u>notified</u> that its CSA data were reviewed. Perhaps a telephone report would suffice unless a major problem was identified.
Total duration of missing or insufficient CSA data exceeded the "low" threshold point.	The specific reasons should be examined and if it is determined that such performance is unacceptable, the source should be directed to take corrective action. The source should be <u>notified</u> (by telephone should suffice) that its CSA data were reviewed and of the findings.
Total duration of missing or insufficient CSA data during the quarter exceeded the "high" threshold point.	Similar to above except: send a written report, and during the next <u>regularly</u> scheduled on-site visit conduct an inspection of the CSA system, O&M records, etc.
Excessive total duration of missing data during the quarter; or excess emissions reportedly "caused by the monitoring system".	Conduct an inspection and/or require the source to submit a report or come to a conference to explain what corrective action it is taking.

- - Continued on next page - -

\* These have been placed in a "relatively" ascending order of severity/importance.

\*\* These examples assume that an agency utilizes a dual level criteria in order to divide the EERs into three categories, as delineated on the "SO<sub>2</sub> emission performance problems" pages.

B). Example Criteria and Recommended Follow-up Actions  
(CSA Data Acquisition Deficiencies) - Continued

<u>Criteria for Action</u>	<u>Recommended Follow-Up Actions</u>
Chronic problems with monitoring system or its data (e.g., for at least three quarters)	Proceed with more rigorous follow-up actions (e.g., require source to demonstrate why it should not be required to install and operate a SO <sub>2</sub> CEMS; actually require source to install and operate a SO <sub>2</sub> CEMS). The urgency and severity of actions should be controlled by the degree to which missing data interfere with effective surveillance.

C). Example Criteria and Recommended Follow-up Actions  
(SO<sub>2</sub> Emission Performance Problems)

<u>Criteria for Action*</u>	<u>Recommended Follow-Up Actions</u>
Total duration of excursions were below the low threshold point.**	Conduct a random "quality assurance" review of some EERs each quarter.
In the first quarter <u>after</u> the source's total duration of excursions exceeded the criteria, the emissions were below the low threshold point.	Check next quarter to determine whether or not similar problems have reoccurred.
- Total duration of the source's excursions in the quarter exceeded the "low" threshold point (two percent of the total source operating and monitored time, and certain other factors, have been used successfully by Region V for their power plants).	(a), (b), (c). Initiate the lowest level of agency action (e.g., a more thorough analysis of the EER and/or other data by an engineer). This may result in the source receiving a warning (by telephone or letter) about its emission rate performance.
- Total duration was <u>less</u> than the agency's "low" threshold point, but there is a <u>significant increase</u> in the number or duration of exceedances in this quarter.	
- Detailed examination of the EER disclosed unacceptable types of exceedances or reasons for exceedances.	

- - Continued on next page - -

\* These were placed in a "relatively" ascending order of severity/importance.

\*\* These examples assume that agencies utilize a dual (e.g., low and high thresholds) criteria in order to divide the EERs into three categories (e.g., those which won't be; those which may be; and those which the agency definitely will follow-up). Furthermore, "totalling the duration" of a source's excursions during a quarter is the preferred method for using EER data to target sources; the total duration referred to here may be obtained from Item #5(b) of Appendix 3. Agencies may choose to use criteria in other ways.

C). Example Criteria and Recommended Follow-up Actions  
(SO<sub>2</sub> Emission Performance Problems) - Continued

<u>Criteria for Action</u>	<u>Recommended Follow-Up Actions</u>
<ul style="list-style-type: none"><li>- Total duration of the source's excursions in the quarter exceeded the "high" threshold point (five percent of the total source operating and monitored time and certain other factors, have been used successfully by Region V for their power plants).</li><li>- Total duration is less than the "high" threshold point, but there has been a <u>significant increase</u> in the number or duration of exceedances.</li></ul>	<p>(a),(b) Initiate a moderate level of agency action (e.g., a more thorough analysis of the EER and other compliance information by the compliance staff). This may result in additional surveillance activity or a conference with the source. An <u>immediate</u> inquiry into specific exceedances should be conducted.</p>
Reoccurrence of the same or similar problems from prior reporting periods.	Proceed with more rigorous follow-up action. The precise nature of the follow-up should depend on the severity of excess emissions and other relevant targeting factors (e.g., size, compliance history)



D). Example Criteria and Recommended Follow-Up Actions  
(Administrative Problems With EER/CSA Data Submittal)

<u>Criteria for Action*</u>	<u>Recommended Follow-Up Actions</u>
Present EER/CSA data report contained one or more reporting deficiencies.**	In <u>every</u> case, call or send a written critique of the submittal relative to the agency's reporting requirements. Require corrective action by next quarter.
EER/CSA data report not received by 45 days after quarter ended.	In <u>every</u> case, call or write the source requiring EER/CSA data report submittal within 15 days.
EER/CSA data report contained the same or similar deficiencies for a second quarter.	Make a telephone follow-up, confirmed by letter, stating deficiencies and requiring corrective action in the next quarterly report.
Chronic (e.g., at least three quarters) problem with EER/CSA data reports.	Proceed with more rigorous follow-up than the previous category (depending in part on the degree these problems impede agency's ability to conduct source surveillance).

---

\* These have been placed in a "relatively" ascending order of severity/importance

\*\* As noted previously, it is highly recommended that the agency request that its sources submit a (CSA-derived) EER. However, the agency may choose to limit its request for data to quarterly reporting of "raw" CSA data.

VIII. Contacts for Future Technical Assistance, Comments,  
and Additional Copies of the Guidance

As agencies implement their CEMS and CSA-derived EER targeting programs, EPA anticipates that there may be a continuing need to respond to technical questions, and to receive comments and suggestions. Additional copies of the guidance may also be needed.

Please direct these technical questions and requests to Louis Paley at (202) 382-2835; or for CDS-related items, please contact Howard Wright at (202) 382-2831. The address for both Mr. Paley and Mr. Wright is:

U.S. Environmental Protection Agency  
Stationary Source Compliance Division (EN-341)  
401 M Street, S.W.  
Washington, D.C. 20460

APPENDIX 1

CHARACTERISTICS OF A BOILER OPERATOR'S CSA PROGRAM

Company/Plant/Boiler: \_\_\_\_\_

Name of Contact: \_\_\_\_\_

Title: \_\_\_\_\_ Phone Number \_\_\_\_\_

††† (All data are to be reported on a "boiler-specific" basis)†††

A. SAMPLING SYSTEM DESCRIPTION (Check Appropriate Description)

1) Coal Sample Location (see diagram, attached)

As loaded at mine . . . . . \_\_\_\_\_  
As received by facility . . . . . \_\_\_\_\_  
As bunkered by facility . . . . . \_\_\_\_\_  
As fired by facility. . . . . \_\_\_\_\_  
Other (describe in Comments #1) . . . . . \_\_\_\_\_

2) Coal Composite Sampling Period

During loading of coal shipment . . . . . \_\_\_\_\_  
During unloading of coal shipment . . . . . \_\_\_\_\_  
During bunkering . . . . . \_\_\_\_\_  
During coal firing. . . . . \_\_\_\_\_  
Other (describe in Comments #2) . . . . . \_\_\_\_\_

3) Coal Composite Sample Size (tons)  
Fixed lot size (define size)\*

Quantity delivered per shipment . . . . . \_\_\_\_\_  
Quantity bunkered daily . . . . . \_\_\_\_\_  
Quantity burned daily . . . . . \_\_\_\_\_  
Other (describe in Comments #3) . . . . . \_\_\_\_\_

4) Number of Increment Samples per Composite  
Sample (specify) . . . . . \_\_\_\_\_

5) ASTM Sampling Designation (type, condition,  
and spacing according to ASTM D-2234)

I,A,1 . . . . . \_\_\_\_\_  
I,B,1 . . . . . \_\_\_\_\_  
I,C,1 . . . . . \_\_\_\_\_  
Other (describe in Comments #4) . . . . . \_\_\_\_\_

---

\* Lot is defined as the average quantity of coal combusted in  
a 24-hour period

Appendix 1 (2 of 3)

B. SAMPLE PREPARATION AND ANALYSIS PROCEDURE DESCRIPTION

- 1) Does "Sample Preparation" Method Conform to ASTM D-2013?  
yes \_\_\_ no \_\_\_ (describe method used in Comments #5)
- 2) Does "Moisture" Analytical Method Conform to ASTM D-3173?  
yes \_\_\_ no \_\_\_ (describe method used in Comments #6)
- 3) Does "Sulfur" Analytical Method Conform to ASTM D-3177?  
yes \_\_\_ no \_\_\_ (describe method used in Comments #7)
- 4) Does "GCV" Analytical Method Conform to ASTM D-2015?  
yes \_\_\_ no \_\_\_ (describe method used in Comments #8)

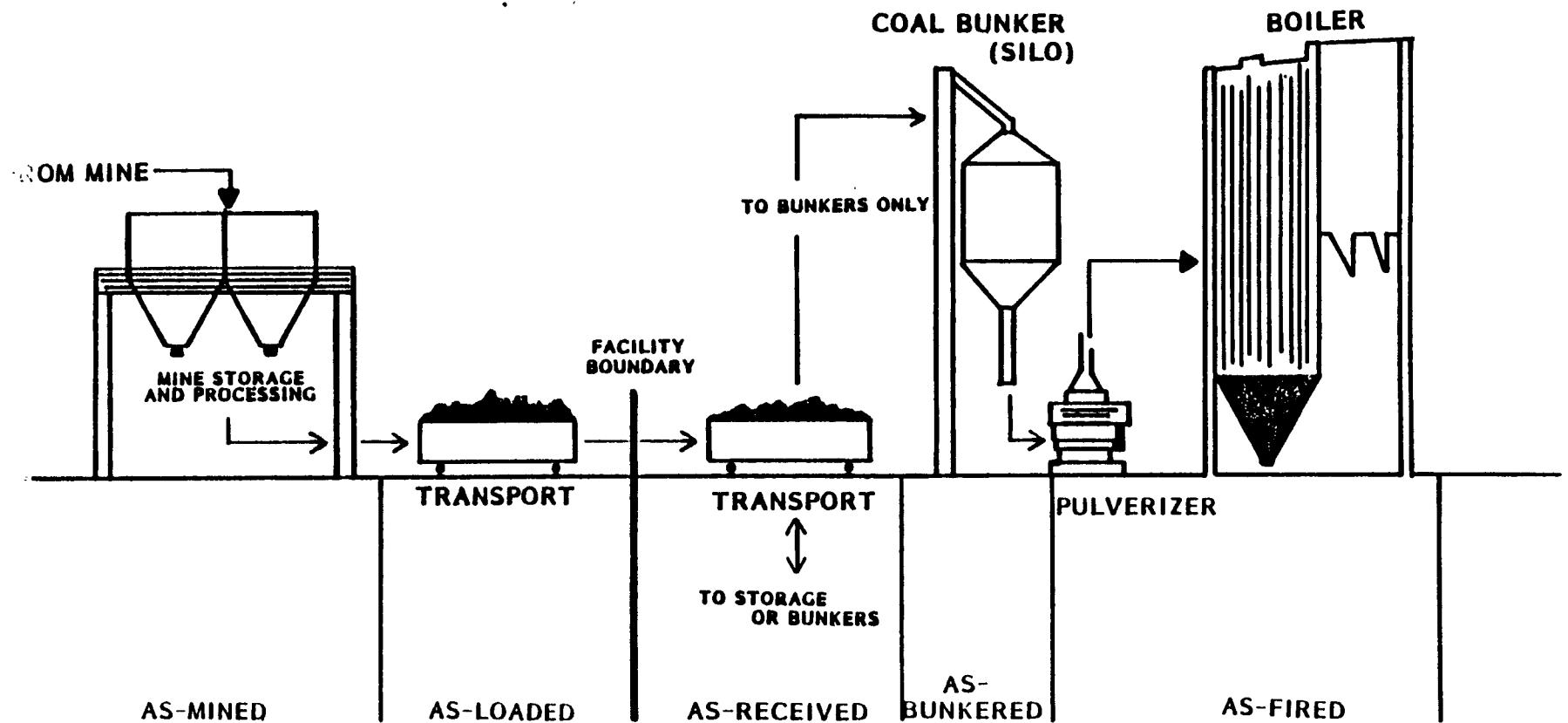
C. COMMENTS (Describe)

- 1) Other Sample Location \_\_\_\_\_  
\_\_\_\_\_
- 2) Other Compositing Sampling Period \_\_\_\_\_  
\_\_\_\_\_
- 3) Other Compositing Sample Size \_\_\_\_\_  
\_\_\_\_\_
- 4) Other ASTM Sampling Designation \_\_\_\_\_  
\_\_\_\_\_
- 5) Method Used in Sample Preparation Procedures \_\_\_\_\_  
\_\_\_\_\_
- 6) Method Used in Moisture Analysis \_\_\_\_\_  
\_\_\_\_\_
- 7) Method Used in Sulfur Analysis \_\_\_\_\_  
\_\_\_\_\_
- 8) Method Used in GCV Analysis \_\_\_\_\_  
\_\_\_\_\_

- D. Source Certification: To the best of my knowledge, the information included herein are accurate and true representations of the subject plant's coal sampling and analysis program.

\_\_\_\_\_  
Name / Title / Date

## COAL SAMPLING POINT LOCATION DIAGRAM



APPENDIX 2

SUMMARY OF AN ORGANIZATION'S  
AVAILABLE CSA DATA AND ITS  
EXCESS EMISSION REPORT

Reviewer's Signatures/Dates:

\_\_\_\_\_ first

\_\_\_\_\_ supervisor

-----  
Recommend Follow-up Action?  
\_\_\_\_ yes, \_\_\_\_ no (see  
Item III, B for details)

\_\_\_\_\_  
Company / Facility / Boiler No.

††† Review the available data and complete by checking or filling-in  
the appropriate answer for each item. †††

I. RECORD OF AN ORGANIZATION'S GENERAL CSA DATA

- A. Measurement/Reporting Period? \_\_\_\_\_
- B. Applicable SO<sub>2</sub> emission limit (identify the regulation  
and the allowable rate)? \_\_\_\_\_
- C. Duration of regulation's averaging/compliance testing  
period (in hours or days)? \_\_\_\_\_
- D. Has an agency previously required the source to perform  
CSA or CEMS monitoring? \_\_\_\_ yes, \_\_\_\_ no, \_\_\_\_ unknown.
- E. Is this data believed to be relevant to the period of  
interest? \_\_\_\_ yes, \_\_\_\_ no, \_\_\_\_ unknown.
- F. Is the duration of time represented by each set of CSA  
results given? \_\_\_\_ yes, \_\_\_\_ no (specify the duration  
here) \_\_\_\_\_
- G. Number of boiler operating days (BODs) during the  
reporting period? \_\_\_\_\_ \*
- H. Number of BODs for which there are available CSA  
data? \_\_\_\_\_
- I. General quality of CSA program? \_\_\_\_ agency-approved,  
\_\_\_\_ consistent with ASTM, \_\_\_\_ other, \_\_\_\_ unknown
- J. Form of available CSA results? \_\_\_\_ paired analytical  
(%S, GCV), \_\_\_\_ SO<sub>2</sub> rate (lb./10<sup>6</sup> Btu), \_\_\_\_ both

\* Unless otherwise defined by the relevant regulation, a "boiler  
operating day" is a fixed twenty-four hour period during which  
some coal is combusted in the steam generating unit.

### A. CSA Data Acquisition Performance:

1) Total number of BOD's when CSA data were reported as not available \_\_\_\_\_.

1) Do the CSA data represent the coal combusted  
in each twenty-four hours? \_\_\_\_ yes, \_\_\_\_ no,  
\_\_\_\_ unknown, \_\_\_\_ other time frame (specify)  
\_\_\_\_\_.

- 2) During which hours was the coal sampling performed each day? \_\_\_\_ a.m. to \_\_\_\_ p.m.
- 3) Which organization calculated the daily SO<sub>2</sub> emission rates shown in the next table?  
\_\_\_\_ source, \_\_\_\_ agency

[illegible][illegible]

\* No sulfur retention credit is to be used when converting CSA data to SO<sub>2</sub> emission rates.



Appendix 2 (4 of 8)

III. RESULTS OF AN ORGANIZATION'S CSA DATA EVALUATION AND EER

- A. Are available data believed to be of sufficient quantity, quality and timeliness to warrant calculation of a SO<sub>2</sub> EER? \_\_\_ yes, \_\_\_ no
- B. If available data are not sufficient to warrant preparation of an EER,
- 1) shall additional data/information be acquired?  
\_\_\_ yes, \_\_\_ no. If yes:
    - a) list the types of additional data which should be acquired: \_\_\_\_\_  
\_\_\_\_\_
    - \*b) recommend which mechanism should be used to acquire additional data/information:  
(if source) \_\_\_ search files further,  
\_\_\_ revise CSA protocol or record-keeping for subsequent data acquisition, \_\_\_ other (specify) \_\_\_\_\_;  
(if agency) \_\_\_ field acquisition by agency, \_\_\_ agency enforcement action (e.g., §114, compliance test), \_\_\_ other (specify) \_\_\_\_\_
- C. Type of coal combusted and sulfur retention credit (SRC) used.
- 1) What type of coal was combusted during the quarter? \_\_\_ bituminous, \_\_\_ subbituminous, \_\_\_ anthracite, \_\_\_ lignite, \_\_\_ unknown
  - 2) What SRC value was used in deriving the EER? \_\_\_ %\*\*
    - a) Should the SO<sub>2</sub> emission rate values be recalculated to eliminate the SRC effect (e.g., SRC > 0 used)? \_\_\_ yes, \_\_\_ no, \_\_\_ unknown (the SRC values used must be determined; "unknown" is unacceptable here)

---

\* This is a "composite" example form which could be used to tailor one or more forms for either an agency or industry review.

\*\* There should be a positive statement on what, if any SRC value was used in deriving the EER. No SRC should be incorporated in the calculations.

Appendix 2 (5 of 8)

D. Have EER results been completed? \_\_\_ yes, \_\_\_ no.

1) Who completed them? \_\_\_ source, \_\_\_ agency

††† NOTE:. OTHER THAN ITEMS III, F, G and H (Reviewer information), DO NOT COMPLETE THE REMAINING ITEMS IF THERE ARE INSUFFICIENT DATA †††

E. Summarize the EER results below.

1) Was the performance of the CSA monitoring and reporting generally adequate? \_\_\_ yes, \_\_\_ no, \_\_\_ unknown (because agency criteria are unknown to the source reviewer)

a) Using the following equation and previous data for missing data and BODs, what total quantity of CSA data were not available?  
\_\_\_ % of BODs

$$Q_{ex} = \frac{\text{missing data (Item II, A, 1)}}{\text{quantity of BODs (Item I, G)}} \times 100$$

b) If the monitoring performance was not adequate, summarize the reason(s) below:

\_\_\_ sub-par sampling method used

\_\_\_ sub-par analytical technique used

\_\_\_ rate of data acquisition was outside the agency's (high, low) threshold value of \_\_\_ % of BODs\*

\_\_\_ sub-par corrective actions were taken

\_\_\_ inadequate reporting was made

2) Summarize the reported periods of excess emissions below:

(a) The allowable SO<sub>2</sub> emission limit is?  
\_\_\_\_\_ lb. SO<sub>2</sub>/10<sup>6</sup> Btu heat input

---

\* If the agency uses dual threshold values, note which one was violated



Appendix 2 (7 of 8)

- (d) Using the following equation, the total duration ( $D_{ex}$ ), in percent of BODs, during which the boiler exceeded the  $SO_2$  emission limit was \_\_\_\_\_ % of BODs.

$$D_{ex} = \frac{d_{ex}}{BODs} \times 100$$

- 3) Was the emission performance generally adequate?  
\_\_\_\_ yes, \_\_\_\_ no, \_\_\_\_ unknown (because agency criteria are unknown). If no, specify the reason below:

- a) \_\_\_\_ total duration of excursions was above the agency's (high, low) \_\_\_\_\_ threshold value(s) of \_\_\_\_\_ % of BODs\*
- b) \_\_\_\_ inadequate, unknown, or no corrective action taken

F. Reviewer's name, affiliation and telephone number:

---

---

G. Final Recommendations and Signatures:

- 1) (if source) On the cover page, record if any source follow-up action should be implemented.
- 2) (if agency) Depending upon the agency's criteria, on the cover page record whether or not agency follow-up action should be implemented.
- 3) (either) On the cover page, the reviewer and reviewer's supervisor should date and sign their names.

---

\* If the agency uses multiple threshold (e.g., 2 & 5%) values, note which one was violated.

Appendix 2 (8 of 8)

H. (if source) Certification of Information

If the source submitted the EER, a source representative should sign and date the following items:

- 1) Data were acquired in a manner fully conforming with the following method(s):

\_\_\_\_\_

\_\_\_\_\_.

- 2) To the best of my knowledge, the data and results included herein are accurate and true representations of the subject boiler's SO<sub>2</sub> emissions.

\_\_\_\_\_  
Name / Title / Date

Recommended Follow-up  
Action?      yes,      no  
(see Item 7 for details)

APPENDIX 3

AGENCY REVIEWER'S CHECKLIST FOR SOURCE-SUBMITTED EERs  
(to be completed only if a source derived the EER)

Phase 1 Review\*

Names

Dates

Phase 2 Review/Subset Data Entry

Names

Dates

Phase 3 Review/CDS Action Entry

Names

Dates

1. Company

Plant/Unit

Quarter

Year

2. Source Preparer

Name

Telephone Number

3. Timeliness

(a) Date Postmarked                     

(b) Days Late                      (if more than 30 days after  
quarter)

4. Completeness (a separate EER and review/summarization  
form (Appendix 2) should be prepared for each boiler)

a. Were the following CSA Monitor-  
ing Performance Data Adequate?

No  
Problem

Problem (Describe)

(1) Date and Time Identifying  
Specific Periods During Which  
CSA Was Inoperative

(2) Nature of CSA System Repairs,  
Adjustments, Modifications

(3) Affirmative Statement of No  
Period of Downtime, Repair  
or Adjustment (including  
CSA modifications)

\* "Phase 1 Review" and other similar phrases relate to the terminology used in the October 5, 1984 EER Guidance and/or as supplemented by the Technical Guidance on the Use of Coal Sampling and Analysis Data to Derive and Follow-Up SO<sub>2</sub> Excess Emission Reports.

Appendix 3 (2 of 6)

b. <u>Were the Following Excess Emission Data Adequate?</u>	No Problem	Problem (Describe)
(1) Data Reported in Units of Applicable Standards		
(2) Date of Commencement		
(3) Date of Completion		
(4) Magnitude		
(5) Definite statement of the Quantity of Sulfur Retention Credit which Was Used in the Reported Emission Values.		
(6) Affirmative Statement of No Excess Emissions		

c. How many boiler operating days were there during the Quarter?\* \_

---

\* A revision of reporting requirements to require a summarization of data, categorization of excess emissions and CSA problems according to new uniform categories, and reporting of source operating time is now under consideration by EPA. Although it may not be specifically required, boiler operating days has been included in this sample form because it is necessary to allow for data analysis. A "boiler operating day" is defined as a fixed twenty-four hour period during which some coal is combusted in the steam generating unit.

Appendix 3 (3 of 6)

5. Data Summary for CSA-derived EERs\*

(a) CSA Monitoring Performance:

Causes of CSA Monitoring Unavailability	Number of Incidents	BODs w/o CSA Data	Percent of BODs Without Data
CSA Equipment Malfunctions			%
Non-CSA Equipment Malfunctions (e.g., data recorder, etc.)			%
Calibration/QA			%
Other Known Causes			%
Unknown Causes			%

- (1) The total percent of BODs which do not have sufficient CSA data is: \_\_\_\_% of BODs.+
- (2) Agency criteria for CSA monitoring performance are: \_\_\_\_% BODs without data.
- (3) Based on the source's CSA monitoring performance this quarter, is some type of agency follow-up warranted? \_\_\_\_ yes, \_\_\_\_ no, \_\_\_\_ maybe

---

\* Proposed definitions for these categories appear in the October 5, 1984 "Technical Guidance in Agency Review of Excess Emission Reports and Follow-up Actions," Appendix 3.

+ Assume all reported CSA downtime occurs during periods of boiler operation unless explicitly stated otherwise.



Appendix 3 (4 of 6)

(b) SO<sub>2</sub> Emission Performance (Data Reported as Daily Periods Unless otherwise Noted):

Causes of Excess Emissions	Number of Incidents	BODs with Excess Emissions	% of BODs w/Excess Emissions
Fuel Supply Problems			%
Fuel Blending/Mixing Problems			%
Other Known Causes			%
Unknown Causes			%

- (1) The total percent of BODs during which the boiler's emissions exceeded the SO<sub>2</sub> limit is: \_\_\_\_\_% of BODs.
- (2) Agency criteria for frequency of excursions are: \_\_\_\_\_% of BODs with excursions.
- (3) Based on the source's emission performance this quarter, is agency follow-up warranted?  
 \_\_\_ no, \_\_\_ yes, \_\_\_ maybe

6. Were the summarized EER data input to the CEMS Subset of CDS? \_\_\_ yes, \_\_\_ no.

Appendix 3 (5 of 6)

7. Recommendations for Follow-up Activity Based on Detailed Review of EER and Other Compliance Information (Indicate recommended agency action with check(s) and/or appropriate letter(s) and comments below.)

Follow-up Actions	CSA Monitor- ing Problems	SO <sub>2</sub> Emission Problems	Timeli- ness	Complete- ness
No Action				
Target Source for Detailed EER Review Next Quarter				
Contact State				
Defer to State				
Contact Source				
a. Telephone source				
b. Meet with source				
c. Request additional information				
d. Request additional reporting				
e. Request corrective action				
f. Request additional testing				
g. Request alternate monitoring				
h. Request specific O&M/QA procedures				
i. Other (Specify)				

----- Continued -----

Appendix 3 (6 of 6)

7. (continued)

Follow-up Actions	CSA Monitor- ing Problems	SO <sub>2</sub> Emission Problems	Timeli- ness	Complete- ness
<u>Targeting for Addi- tional Surveillance</u>				
a. Inspection				
b. Audit of CSA				
c. Compliance Test				
d. Other (Specify)				
<u>Take Enforcement Action</u>				
a. Warning Letter				
b. § 113 FOV/NOV				
c. § 113 Compliance Order				
d. § 120 Notice of Noncompliance				
e. Initiate Civil Action				
f. Other (Specify)				

Comments/Overall Recommendation: (also check "yes" in action block on page 1 if action is recommended here) \_\_\_\_\_

8. Were the Agency's Revised Compliance Status and Follow-up Action Coded and Entered in CDS? (Also sign the third line, page 1 of the Checklist) \_\_\_\_ yes, \_\_\_\_ no, \_\_\_\_ no change required because \_\_\_\_\_.

(a) CDS data element "SCMS" was changed from \_\_\_\_\_ to \_\_\_\_\_.

ATTACHMENT II

EXAMPLE OF AN AGENCY'S CONVERSION OF CSA DATA  
INTO A SO<sub>2</sub> EER AND ITS FOLLOW-UP ACTIVITIES

Prepared by

Louis R. Paley  
Technical Support Branch

Stationary Source Compliance Division  
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October 1985

ATTACHMENT II

EXAMPLE OF AN AGENCY'S CONVERSION OF CSA DATA  
INTO A SO<sub>2</sub> EER AND ITS FOLLOW-UP ACTIVITIES

In an effort to clarify the guidance further and to assist in the preparation of a CSA-derived EER, a specific example of an agency's review of actual CSA data is provided in the following paragraphs and example data sheets.

I. Initial Agency Evaluation of the Completeness and the Quality of the Data\*

This activity was performed in Phase 1, of the agency's EER review and follow-up program, and was done by a para-professional.

Step 0: Complete the boiler-specific information contained in Example Data #1.

Items I, II, and III (A-D) of the "Example Data #1" represented the data which the agency had at the outset of the process. The agency had previously developed a "CSA Guidance-affected Inventory."\*\*

Step 1: Evaluate the completeness and the quality of the data

Step 1A:

The reviewer evaluated the data available within the organization and determined if they were sufficient in terms of: completeness (e.g., >85% of the BODs); timeliness (from the calendar quarter of interest); quality (data from an as-fired or as-bunkered CSA system); and known sulfur retention credit (SRC).

---

\* The paragraph and Step numbers in this attachment coincide (except for Step 0) with those used in Attachment I.

\*\* Such an inventory can be simply derived by defining which coal-fired boilers the agency desires to receive periodic SO<sub>2</sub> emission rate/EERs from, and subtracting from those the boilers which operate FGDS and/or submit (or should submit) CEMS-based data to the agency

In this manner the reviewer evaluated the available data relative to the specific boiler of interest. The results of the review were recorded in Items III (A-D) of Example Data #1, and he signed and dated the form in the signature blocks on pages 1 and 10.

As one can see in Example Data #1, the agency's reviewer found insufficient information to warrant development of an EER.

## II. Agency Requested Additional Data

The agency sent a \$114 letter (enclosing forms similar to those given as Appendix 1 and 2 of Attachment I) to the boiler operator. It required source submittal, within 30 days after receipt of the request, of: (a) currently-available CSA data and information for the most recent quarter; and (b) source completion of a summary EER. A copy of the source's response to that letter is presented as Example Data #2 and #3.

## III. Agency Evaluation of the Additional Data

Because the agency requested, and the source provided, the background data and EER, the reviewer did not have to review anything but Example Data #2 and #3. Therefore, Sections IV and V and Steps 2-7 of Attachment I were skipped.

## VI. Agency Review, Summarization and Entry of CSA-derived EER Data

### A. Phase 1 - Screening Assessment and Summarization of the Data

Step 8: Assess and record the completeness and general acceptability of the EER.

The reviewer evaluated the EER and completed Items 1 to 4 on the "EER Reviewer's Checklist" (Example Data #4). While many items were required, he remembered that the key to effective use of EERs is to concentrate on whether the source acquired and reported an adequate quantity of CSA data, and whether its emissions remained below the emission limit.

Step 9: Summarize and record the source's CSA monitoring and emission performance data.

Before the EER data were entered into the CEMS Subset and used, the data were summarized consistent with Item 5 of Example Data #4. The two parameters which the reviewer summarized were:

- (a) total number and duration of individual CSA data acquisition system downtime incidents; and
- (b) total number and duration of individual exceedance periods.

The results of the summarization were recorded in Items 5(a) and 5(b) of Example Data #4. The agency's criteria for taking follow-up actions (Item 5, (a), (2) and 5, (b), (2) respectively), and the reviewer's determination of whether such follow-up was warranted (Items 5, (a), (3) and 5, (b), (3), respectively) were recorded.

B. Phase 2 - Verification of Phase 1 Results, Selective Targeting of Sources, and Data Entry into the Subset of the CDS

The Phase 2 EER activities were performed by an experienced compliance person.

Step 10: Supervisory verification and concurrence with Phase 1 results

The supervisor reviewed the results of the Phase 1 evaluation which were recorded in Items 1 to 5 of Example Data #4.

Step 11: Supervision of entry of summarized EER data into the CEMS Subset of the CDS.\*

At least once per quarter, the supervisor insured that the summarized EER data, targeting results and follow-up recommendations were entered appropriately and in a timely fashion. The supervisor also insured that the source was notified about these results. Completion of these entry activities were recorded in Item 6 of Example Data #4.

---

\* Procedures for CSA data entry will be subsequently furnished by SSCD as part of the CDS program.

Step 12: Selectively target and record outlier sources for follow-up

The reviewer took account of the following items prior to targeting the source:

- a) impact of the differences in methodology and averaging periods;
- b) potential sulfur retention credit; and
- c) previous compliance history.

The reviewer used the information provided in Section VI of Attachment I to help address the first two points. He concluded that the potential impacts of these points approximately offset each other. Furthermore, he reassessed his initial recommendation for agency follow-up (recorded in Item 5, (a), (3) and 5, (b), (3)) because he took account of the source's compliance history.

The reviewer's final recommendations for follow-up actions were recorded in Item 7 of Example Data #4. The facts that the source had a good compliance record and that this was the first quarter that the agency noted the problems, resulted in a final recommendation that the agency take somewhat less vigorous enforcement actions than he preliminarily had recommended.\*

Step 13: Revise, if appropriate, the source's compliance status in the CDS.

The fact that the reviewer targeted the source should cause the source to take some corrective actions. The reviewer "flagged" the targeted sources by recording its status in CDS as being in "non-compliance".\*\* Once the reviewer confirmed that the appropriate compliance status for the source was stored in CDS, he completed Item 8 in Example Data #4.

---

\* Had the source's problems (noted in the subject quarter) been chronic ones, or if the source had a poor compliance history, the reviewer would likely have recommended case development and referral for litigation (based on (at least) the source's continuing violation of the §60.11(d) requirement to operate and maintain the process in a manner which minimized air pollution).

\*\* Other "flagging" methods may also be suitable.



EXAMPLE DATA #1

SUMMARY OF AN ORGANIZATION'S  
AVAILABLE CSA DATA AND ITS  
EXCESS EMISSION REPORT

Reviewer's Signatures/Dates:

\_\_\_\_\_ first

\_\_\_\_\_ N/A supervisor

-----  
Recommend Follow-up Action?  
x yes, \_\_\_\_\_ no (see Item  
III, B for details)

Midwest Electric Co., Frequent Excursions Plant, Unit #1  
Company / Facility / Boiler No.

††† Review the available data and complete by checking or filling-in  
the appropriate answer for each item. †††

I. RECORD OF AN ORGANIZATION'S GENERAL CSA DATA

- A. Measurement/Reporting Period? January 1 - March 31, 1983
- B. Applicable SO<sub>2</sub> emission limit (identify the regulation  
and the allowable rate)? NSPS, Subpart D (1.201b/10<sup>6</sup> Btu)
- C. Duration of regulation's averaging/compliance testing  
period (in hours or days)? Reference Method 6 (a few hours)
- D. Has an agency previously required the source to perform  
CSA or CEMS monitoring? \_\_\_\_\_ yes, x no, \_\_\_\_\_ unknown.
- E. Is this data believed to be relevant to the period of  
interest? x yes, \_\_\_\_\_ no, \_\_\_\_\_ unknown.
- F. Is the duration of time represented by each set of CSA  
results given? \_\_\_\_\_ yes, x no (specify the duration  
here) \_\_\_\_\_
- G. Number of boiler operating days (BODs) during the  
reporting period? \_\_\_\_\_ unknown \_\_\_\_\_ \*

\* Unless otherwise defined by the relevant regulation, a "boiler  
operating day" is a fixed twenty-four hour period during which  
some coal is combusted in the steam generating unit.

J. Form of available CSA results? x paired analytical  
(%S, GCV),      SO<sub>2</sub> rate (lb./10<sup>6</sup> Btu),      both

## II. DETAILS OF THE ORGANIZATION'S EER DATA

### A. CSA Data Acquisition Performance:

[illegible]

1) Total number of BOD's when CSA data were reported as not available = 2 .

Example Data #1 (3 of 9)

B. Daily CSA/SO<sub>2</sub> Emissions Data

- 1) Do the CSA data represent the coal combusted in each twenty-four hours? x yes, \_\_\_ no, \_\_\_ unknown, \_\_\_ other time frame (specify) \_\_\_\_\_.
- 2) During which hours was the coal sampling performed each day? N/A a.m. to \_\_\_ p.m.
- 3) Which organization calculated the daily SO<sub>2</sub> emission rates shown in the next table?  
N/A source, \_\_\_ agency

4) Daily CSA/SO<sub>2</sub> data:

[illegible][illegible]

\* No data available for this day

\*\* No sulfur retention credit is to be used when converting CSA data to SO<sub>2</sub> emission rates.

A. Are available data believed to be of sufficient quantity, quality and timeliness to warrant calculation of a SO<sub>2</sub> EER?      yes,   x   no

1) shall additional data/information be acquired?  
x yes, \_\_\_ no. If yes:

a) list the types of additional data which should be acquired: CSA results for at least 85% of the BODs in the most recent quarter

\*b) recommend which mechanism should be used to acquire additional data/information:  
(if source) N/A search files further,  
     revise CSA protocol or record-keeping for subsequent data acquisition,      other (specify)                                     ;  
(if agency)      field acquisition by agency,       
  x   agency enforcement action (e.g., §114, compliance test),      other (specify)     

1) What type of coal was combusted during the quarter?      bituminous,      subbituminous,      anthracite,      lignite, x unknown

2) What SRC value was used in deriving the EER? N/A\*

a) Should the SO<sub>2</sub> emission rate values be recalculated to eliminate the SRC effect (e.g., SRC > 0 used)?      yes,      no,   x   unknown (the SRC values used must be determined; "unknown" is unacceptable here)

D. Have EER results been completed?      yes,   x   no.

1) Who completed them? \_\_\_\_\_ source, \_\_\_\_\_ agency

- \* There should be a positive statement on what, if any SRC value was used in deriving the EER. No SRC should be incorporated in the calculation.

Example Data #1 (6 of 9)

††† NOTE: OTHER THAN ITEMS III, F, G and H (Reviewer information), DO NOT COMPLETE THE REMAINING ITEMS IF THERE ARE INSUFFICIENT DATA †††

E. Summarize the EER results below.

1) Was the performance of the CSA monitoring and reporting generally adequate?      yes,      no,      unknown (because agency criteria are unknown)

a) Using the following equation and previous data for missing data and BODs, what total quantity (as a percent of BODs) of CSA data were not available?          % of BODs

$$Q_{ex} = \frac{\text{missing data (Item II, A, 1)}}{\text{quantity of BODs (Item I, G)}} \times 100$$

b) If the monitoring performance was not adequate, summarize the reason(s) below:

     sub-par sampling method used

     sub-par analytical technique used

     rate of missing data was above the agency's (high, low)          threshold value of      % of BODs\*\*

     sub-par corrective actions were taken

     inadequate reporting was made

---

\*\* If the agency uses dual threshold values, note which one was violated.

(a) The allowable SO<sub>2</sub> emission limit is?  
\_\_\_\_\_ lb. SO<sub>2</sub>/10<sup>6</sup> Btu heat input

[illegible]

(b) How many times did the daily emission rate data (above) exceed the allowable emission level ( $n_{ex}$ )? \_\_\_\_\_

\* No SRC value should be incorporated in these results

Example Data #1 (8 of 9)

- (c) The total duration ( $d_{ex}$ ) of BODs during which the boiler exceeded the SO<sub>2</sub> emission limit was (from previous table) \_\_\_\_ days.
- (d) Using the following equation, the total duration ( $D_{ex}$ ), in percent of BODs, during which the boiler exceeded the SO<sub>2</sub> emission limit was \_\_\_\_\_ % of BODs.

$$D_{ex} = \frac{d_{ex} \times 100}{BODs}$$

- 3) Was the emission performance generally adequate? \_\_\_\_ yes, \_\_\_\_ no, \_\_\_\_ unknown (because agency criteria are unknown). If no, specify reasons below:

- a) \_\_\_\_ total duration of excursions was above the agency's (high, low) \_\_\_\_\_ threshold value(s) of \_\_\_\_\_ % of BODs\*
- b) \_\_\_\_ inadequate, unknown, or no corrective action taken

F. Reviewer's name, affiliation and telephone number:

Louis Roberts, EPA (202) 382-4000

G. Final Recommendations and Signatures:

- 1) (if source) On the cover page record if any source follow-up action should be implemented.
- 2) (if agency) Depending upon the agency's criteria, on the cover page record whether or not agency follow-up action should be implemented.
- 3) (either) On the cover page the reviewer and reviewer's supervisor should date and sign their names.

---

\* Note both threshold value(s), and which one was violated, if the agency uses multiple threshold (e.g., 2 & 5%) values.



Example Data #1 (9 of 9)

H. (if source) Certification of Information

If the source submitted the EER, a source representative should sign and date the following items:

- 1) Data were acquired in a manner fully conforming with the following method(s):

N/A

N/A

- 2) To the best of my knowledge, the data and results included herein are accurate and true representations of the subject boiler's SO<sub>2</sub> emissions.

N/A

Name

/

Title

/

Date

EXAMPLE DATA #2

CHARACTERISTICS OF A BOILER OPERATOR'S CSA PROGRAM

Company/Plant/Boiler: Midwest Electric Co., Frequent Excursions  
Plant, Unit #1

Name of Contact: John Smythe

Title: Plant Superintendent Phone Number (817) 279-5534

††† (All data are to be reported on a "boiler-specific" basis)†††

A. SAMPLING SYSTEM DESCRIPTION (Check Appropriate Description)

1) Coal Sample Location (see diagram, attached)

As loaded at mine . . . . .	_____
As received by facility . . . . .	_____
As bunkered by facility . . . . .	<u>x</u>
As fired by facility. . . . .	_____
Other (describe in Comments #1) . . . . .	_____

2) Coal Composite Sampling Period

During loading of coal shipment . . . . .	_____
During unloading of coal shipment . . . . .	<u>x</u>
During bunkering . . . . .	_____
During coal firing. . . . .	_____
Other (describe in Comments #2) . . . . .	_____

3) Coal Composite Sample Size (tons)  
Fixed lot size (define size)\*

Quantity delivered per shipment . . . . .	_____
Quantity bunkered daily . . . . .	_____
Quantity burned daily . . . . .	<u>4000 (avg.)</u>
Other (describe in Comments #3) . . . . .	_____

4) Number of Increment Samples per Composite  
Sample (specify) . . . . .

35

5) ASTM Sampling Designation (type, condition,  
and spacing according to ASTM D-2234)

I,A,1 . . . . .	_____
I,B,1 . . . . .	<u>x</u>
I,C,1 . . . . .	_____
Other (describe in Comments #4) . . . . .	_____

---

\* Lot is defined as the average quantity of coal combusted in  
a 24-hour period

Example Data #2 (2 of 3)

B. SAMPLE PREPARATION AND ANALYSIS PROCEDURE DESCRIPTION

- 1) Does "Sample Preparation" Method Conform to ASTM D-2013?  
yes  x  no      (describe method used in Comments #5)
- 2) Does "Moisture" Analytical Method Conform to ASTM D-3173?  
yes  x  no      (describe method used in Comments #6)
- 3) Does "Sulfur" Analytical Method Conform to ASTM D-3177?  
yes  x  no      (describe method used in Comments #7)
- 4) Does "GCV" Analytical Method Conform to ASTM D-2015?  
yes  x  no      (describe method used in Comments #8)

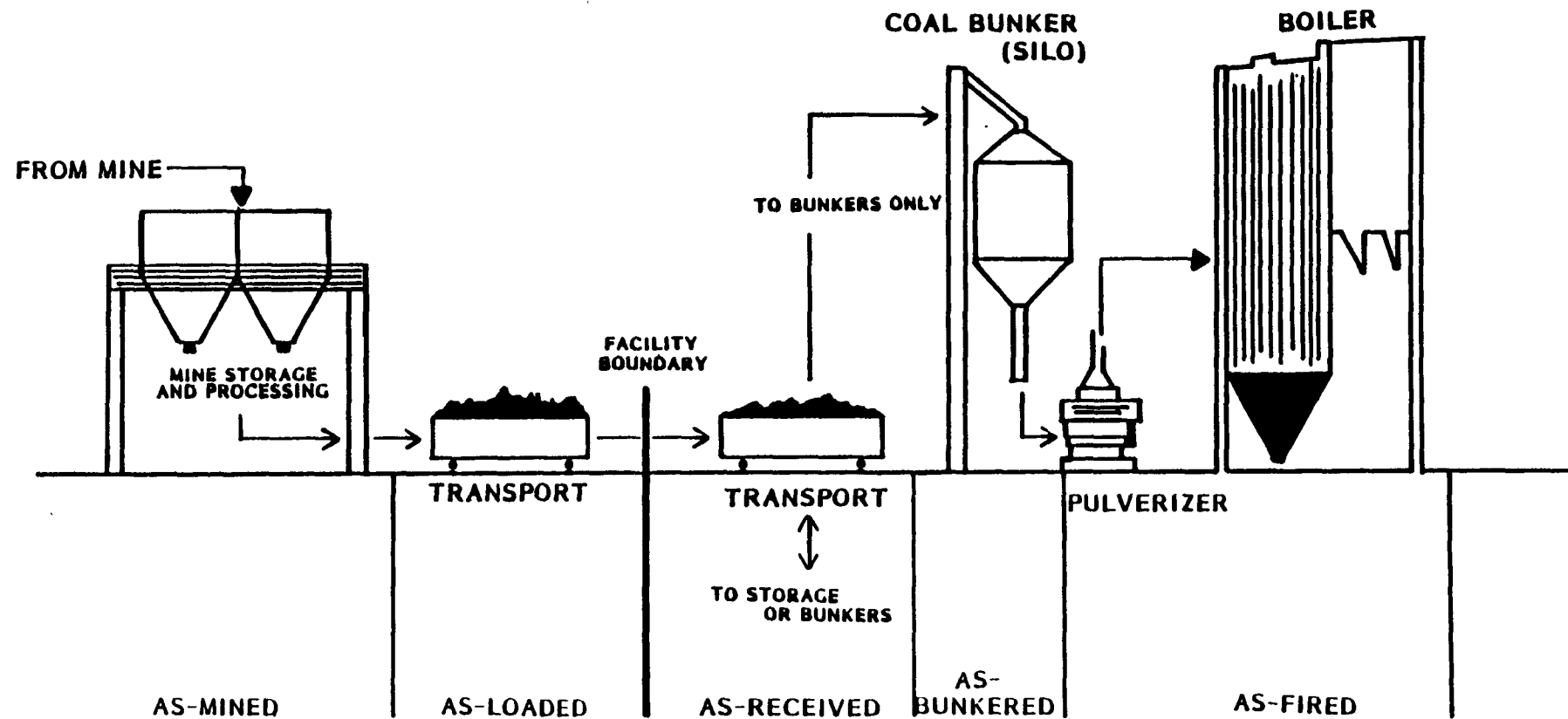
C. COMMENTS (Describe)

- 1) Other Sample Location  N/A
- 2) Other Compositing Sampling Period  N/A
- 3) Other Composited Sample Size  N/A
- 4) Other ASTM Sampling Designation  N/A
- 5) Method Used in Sample Preparation Procedures  N/A
- 6) Method Used in Moisture Analysis  N/A
- 7) Method Used in Sulfur Analysis  N/A
- 8) Method Used in GCV Analysis  N/A

D. Source Certification: To the best of my knowledge, the information included herein are accurate and true representations of the subject plant's coal sampling and analysis program.

John Smythe,	Plant Superintendent	7/6/83
Name	Title	Date

## COAL SAMPLING POINT LOCATION DIAGRAM



EXAMPLE DATA #3

SUMMARY OF A BOILER OPERATOR'S  
MOST RECENT QUARTER CSA DATA  
AND ITS EXCESS EMISSION REPORT

Midwest Electric Co., Frequent Excursions Plant, Unit #1  
Company / Facility / Boiler No.

††† Review the available data and complete by checking or filling-in the appropriate answer for each item. †††

I. RECORD OF AN ORGANIZATION'S GENERAL CSA DATA

- A. Measurement/Reporting Period? April, 1, 1983 - June 30, 1983
- B. Applicable SO<sub>2</sub> emission limit (identify the regulation and the allowable rate)? NSPS, Subpart D (1.20lb/10<sup>6</sup> Btu)
- C. Duration of regulation's averaging/compliance testing period (in hours or days)? Reference Method 6 (a few hours)
- D. Has an agency previously required the source to perform CSA or CEMS monitoring? x yes, \_\_\_ no, \_\_\_ unknown.
- E. Is this data believed to be relevant to the period of interest? x yes, \_\_\_ no, \_\_\_ unknown.
- F. Is the duration of time represented by each set of CSA results given? x yes, \_\_\_ no, (specify the duration here) 24 hours
- G. Number of boiler operating days (BODs) during the reporting period? 57 \*
- H. Number of BODs for which there are available CSA data? 54
- I. General quality of CSA program? \_\_\_ agency-approved, x consistent with ASTM, \_\_\_ other, \_\_\_ unknown
- J. Form of available CSA results? \_\_\_ paired analytical (%S, GCV), \_\_\_ SO<sub>2</sub> rate (lb./10<sup>6</sup> Btu), x both

---

\* Unless otherwise defined by the relevant regulation, a "boiler operating day" is a fixed twenty-four hour period during which some coal is combusted in the steam generating unit.

### A. CSA Data Acquisition Performance:

1) Total number of BOD's when CSA data were reported as not available 3.

1) Do the CSA data represent the coal combusted in each twenty-four hours? x yes,      no,      unknown,      other time frame (specify)

2) During which hours was the coal sampling performed each day? 8:00 a.m. to 3:00 p.m.

3) Which organization calculated the daily SO<sub>2</sub> emission rates shown in the next table?  
x source, \_\_\_\_\_ agency

Sampling Period (date)	Sulfur Content (%S by weight, dry basis)	Higher Heating Values (GCV, Btu, dry basis)	Emission Rate (lb/10 <sup>6</sup> Btu)**
4/1/83	0.60	11,901	0.999
4/2	0.65	12,337	1.059
4/3	0.70	12,037	1.166
4/4	0.56	11,820	0.940
4/5	0.66	12,219	1.085
+4/6	0.93	12,167	1.491
4/7	0.66	12,692	1.044
+4/8	0.73	11,939	1.225
4/9	0.62	12,480	1.000
4/10	0.67	12,013	1.120
+4/11	0.76	11,995	1.268
4/12	0.57	12,105	0.934
4/13	0.62	12,462	1.001
4/14	*	*	*
+4/15	0.80	12,110	1.320
4/16	0.58	12,050	0.971
4/17	0.56	11,950	0.946
4/18	0.60	11,958	1.011
4/19	0.55	11,980	0.928
4/20	0.67	12,050	1.117
4/21	0.63	12,400	1.022
4/22	0.58	12,301	0.951
4/23	0.53	12,052	0.890
4/24	0.70	12,080	1.162
+4/25	0.76	12,120	1.255
+4/26	0.78	11,985	1.302
4/27	0.58	12,080	0.969
4/28	0.56	12,050	0.939
4/29	0.62	12,008	1.039
4/30	0.64	11,985	1.074
5/1-6/4	Annual Outage		
6/4	0.66	11,989	1.106
6/5	0.72	12,080	1.195
6/6	*	*	*
+6/7	0.81	12,068	1.341
6/8	0.71	12,045	1.182
6/9	0.70	12,045	1.166
6/10	0.62	12,003	1.040
6/11	0.60	11,895	1.016
6/12	0.64	11,933	1.079
6/13	*	*	*
6/14	0.70	12,115	1.16
6/15	0.72	12,005	1.198
6/16	0.67	12,201	1.103
6/17	0.68	12,500	1.092

[illegible]

\*\* No sulfur retention credit was used when converting CSA data to SO<sub>2</sub> emission rates.

III. RESULTS OF THE BOILER OPERATOR'S CSA DATA  
EVALUATION AND EER

- A. Are available data believed to be of sufficient quantity, quality and timeliness to warrant calculation of a SO<sub>2</sub> EER? x yes, \_\_\_ no
- B. If available data are not sufficient to warrant preparation of an EER,
- 1) shall additional data/information be acquired?  
\_\_\_ yes, x no. If yes:
- a) list the types of additional data which should be acquired: N/A
- b) recommend which mechanism should be used to acquire additional data/information:  
(if source) N/A search files further,  
\_\_\_ revise CSA protocol or record-keeping for subsequent data acquisition, \_\_\_ other (specify) \_\_\_\_\_;  
(if agency) N/A field acquisition by agency,  
\_\_\_ agency enforcement action (e.g., §114, compliance test), \_\_\_ other (specify) \_\_\_\_\_
- C. Type of coal combusted and sulfur retention credit (SRC) used.
- 1) What type of coal was combusted during the quarter? x bituminous, \_\_\_ subbituminous, \_\_\_ anthracite, \_\_\_ lignite, \_\_\_ unknown
- 2) What SRC value was used in deriving the EER? 0 %\*
- a) Should the SO<sub>2</sub> emission rate values be recalculated to eliminate the SRC effect (e.g., SRC > 0 used)? \_\_\_ yes, x no, \_\_\_ unknown (the SRC values used must be determined; "unknown" is unacceptable here)
- D. Have EER results been completed? x yes, \_\_\_ no.
- 1) who completed them? x source, \_\_\_ agency

---

\* There should be a positive statement on what, if any SRC value was used in deriving the EER. No SRC should be incorporated in the calculation.



Example Data #3 (5 of 8)

††† NOTE: OTHER THAN ITEMS III, F, G and H (Reviewer information), DO NOT COMPLETE THE REMAINING ITEMS IF THERE ARE INSUFFICIENT DATA †††

E. Summarize the EER results below.

1) Was the performance of the CSA monitoring and reporting generally adequate?      yes,      no,   x   unknown (because agency criteria are unknown)

a) Using the following equation and the previous data for missing data and BODs, what total quantity of CSA data, were not available?  
5.3 % of BODs

$$Q_{ex} = \frac{\text{missing data (Item II, A, 1)}}{\text{quantity of BODs (Item I, G)}} \times 100$$

b) If the monitoring performance was not adequate, summarize the reason(s) below:

     sub-par sampling method used

     sub-par analytical technique used

     rate of missing data was above the agency's (high, low)      threshold value of      % of BODs\*\*

     sub-par corrective actions were taken

     inadequate reporting was made

---

\*\* If the agency uses dual threshold values, note which one was violated.

- (a) The allowable SO<sub>2</sub> emission limit is?  
1.20 lb. SO<sub>2</sub>/10<sup>6</sup> Btu heat input

(c) Total duration ( $d_{ex}$ ) of BODs during which the boiler exceeded the  $SO_2$  emission limit (from table above) was 7 days.

\* No SRC value was incorporated in these results.

Example Data #3 (7 of 8)

- (d) Using the following equation, the total duration ( $D_{ex}$ ), in percent of BODs, during which the boiler exceeded the SO<sub>2</sub> emission limit was 12.2 % of BODs.

$$D_{ex} = \frac{d_{ex}}{BODs} \times 100$$

- 3) Was the emission performance generally adequate? yes, no, x unknown (because agency criteria are unknown). If no, specify reasons below:

- a)        total duration of excursions was above the agency's (high, low)        threshold value(s) of        % of BODs\*
- b)        inadequate, unknown, or no corrective action taken

F. Reviewer's name, affiliation and telephone number:

Robert Johns, Midwest Electric Co. (404) 872-2534

G. Final Recommendations and Signatures:

- 1) (if source) On the cover page record if any source follow-up action should be implemented.
- 2) (if agency) Depending upon the agency's criteria, on the cover page record whether or not agency follow-up action should be implemented.
- 3) (either) On the cover page the reviewer and reviewer's supervisor should data and sign their names.

---

\* Note both threshold value(s), and which one was violated, if the agency uses multiple threshold (e.g., 2 & 5%) values.

Example Data #3 (8 of 8)

H. (if source) Certification of Information

If the source submitted the EER, a source representative should sign and date the following items:

- 1) Data were acquired in a manner fully conforming with the (specify) following method(s):

ASTM methods as noted above

- 2) To the best of my knowledge, the data and results included herein are accurate and true representations of the subject boiler's SO<sub>2</sub> emissions.

John Smythe, Plant Superintendent, 7/6/83

Name / Title / Date

Recommended Follow-up  
Action? x yes,    no  
(see Item 7 for details)

EXAMPLE DATA #4

AGENCY REVIEWER'S CHECKLIST FOR SOURCE-SUBMITTED EERs  
(to be completed only if a source derived the EER)

- Phase 1 Review\* Louis Roberts 7/25/83  
Names Dates
- Phase 2 Review/Subset Data Entry Louis Roberts 7/27/83  
Names Dates
- Phase 3 Review/CDS Action Entry Louis Roberts 7/27/83  
Names Dates
1. Company Midwest Electric Company 2nd 1983  
Plant/Unit Frequent Excursions Plant, Unit #1 Quarter Year
2. Source Preparer Robert Johns (404) 872-2534  
Name Telephone Number
3. Timeliness
- (a) Date Postmarked 7/7/83
- (b) Days Late N/A (if more than 30 days after quarter)
4. Completeness (a separate EER and review/summarization form (Appendix 2) should be prepared for each boiler)

a. <u>Were the following CSA Monitoring Performance Data Adequate?</u>	No Problem	Problem (Describe)
(1) Date and Time Identifying Specific Periods During Which CSA Was Inoperative	x	
(2) Nature of CSA System Repairs, Adjustments, Modifications	x	
(3) Affirmative Statement of No Period of Downtime, Repair or Adjustment (including CSA modifications)	x	

\* "Phase 1 Review" and other similar phrases relate to the terminology used in the October 5, 1984 EER Guidance and/or as supplemented by the Technical Guidance on the Use of Coal Sampling and Analysis Data to Derive and Follow-Up SO<sub>2</sub> Excess Emission Reports.

Example Data #4 (2 of 6)

b. <u>Were the Following Excess Emission Data Adequate?</u>	No Problem	Problem (Describe)
(1) Data Reported in Units of Applicable Standards	x	
(2) Date of Commencement	x	
(3) Date of Completion	x	
(4) Magnitude	x	
(5) Definite statement on the Quantity of Sulfur Retention Credit which Was Used in the Reported Emission Values.	x	
(6) Affirmative Statement of No Excess Emissions	x	

c. How many boiler operating days were there during the Quarter?\* 5

---

\* A revision of reporting requirements to require a summarization of data, categorization of excess emissions and CSA problems according to new uniform categories, and reporting of source operating time is now under consideration by EPA. Although it may not be specifically required, boiler operating days has been included in this sample form because it is necessary to allow for data analysis. A "boiler operating day" is defined as a fixed twenty-four hour period during which some coal is combusted in the steam generating unit.

Example Data #4 (3 of 6)

5. Data Summary for CSA-derived EERs\*

(a) CSA Monitoring Performance:

Causes of CSA Monitoring Unavailability	Number of Incidents	BODs w/o CSA Data	Percent of BODs Missing Data
CSA Equipment Malfunctions	3	3	5.3 %
Non-CSA Equipment Malfunctions (e.g., data recorder, etc.)			%
Calibration/QA			%
Other Known Causes			%
Unknown Causes			%

- (1) The total percent of BODs which do not have sufficient CSA data is: 5.3 % of BODs.+
- (2) Agency criteria for CSA monitoring performance are: <5 % of BODs without data.
- (3) Based on the source's CSA monitoring performance this quarter, is some type of agency follow-up warranted? x yes,    no,    maybe

\* Proposed definitions for these categories appear in the October 5, 1984 "Technical Guidance in Agency Review of Excess Emission Reports and Follow-up Actions," Appendix 3.

+ Assume all reported CSA downtime occurs during periods of boiler operation unless explicitly stated otherwise.

Example Data #4 (4 of 6)

(b) SO<sub>2</sub> Emission Performance (Data Reported as Daily Periods Unless otherwise Noted):

Causes of Excess Emissions	Number of Incidents	BODs with Excess Emissions	% of BODs w/Excess Emissions
Fuel Supply Problems	2	2	3.5 %
Fuel Blending/Mixing Problems	5	5	8.8 %
Other Known Problems			%
Unknown Causes			%

- (1) The total percent of BODs during which the boiler's emissions exceeded the SO<sub>2</sub> limit is: 12.3 % of BODs.
- (2) Agency criteria for frequency of excursions are: <5 % of BODs with excursions.
- (3) Based on the source's emission performance this quarter, is agency follow-up warranted?  
    no,   x   yes,     maybe

6. Were the summarized EER data input to the CEMS Subset of CDS?   x   yes,     no.



Example Data #4 (5 of 6)

7. Recommendations for Follow-up Activity Based on Detailed Review of EER and Other Compliance Information (Indicate recommended agency action with check(s) and/or appropriate letter(s) and comments below.)

Follow-up Actions	CSA Monitor- ing Problems	SO <sub>2</sub> Emission Problems	Timeli- ness	Complete- ness
No Action			x	x
Target Source for Detailed EER Review Next Quarter				
Contact State				
Defer to State				
Contact Source				
a. Telephone source				
b. Meet with source				
c. Request additional information				
d. Request additional reporting				
e. Request corrective action				
f. Request additional testing				
g. Request alternate monitoring				
h. Request specific O&M/QA procedures				
i. Other (Specify)				

----- Continued -----

7. (continued)

Follow-up Actions	CSA Monitor- ing Problems	SO <sub>2</sub> Emission Problems	Timeli- ness	Complete- ness
<u>Targeting for Addi- tional Surveillance</u>				
a. Inspection				
b. Audit of CSA				
c. Compliance test				
d. Other (Specify)				
<u>Take Enforcement Action</u>				
a. Warning Letter	x			
b. § 113 FOV/NOV		x		
c. § 113 Compliance Order				
d. § 120 Notice of Noncompliance				
e. Initiative civil action				
f. Other (Specify)				

Comments/Overall Recommendation: (also check "yes" in action block on page 1 if action is recommended here) At a minimum, make a FOV and offer the boiler's owner or operator an opportunity to participate in a §113 conference.

8. Were the Agency's Revised Compliance Status and Follow-up Action Coded and Entered in CDS? (Also sign the third line, page 1 of the Checklist) x yes, \_\_\_ no, \_\_\_ no change required because \_\_\_\_\_.

(a) CDS data element "SCMS" was changed from 3 to 1.

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