

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 63, 264, 265, and 266**

**[EPA/OSW-FR-95- ; SWH-FRL- ]**

**CEMS DEMONSTRATION ANNOUNCEMENT**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of request for proposals.

**SUMMARY:** The Office of Solid Waste, U.S. Environmental Protection Agency, plans to conduct a demonstration of particulate matter (PM) and total mercury (Hg) Continuous Emissions Monitoring Systems (CEMS) for stack monitoring of hazardous waste combustors (e.g., incinerators, cement kilns, and light-weight aggregate kilns that burn hazardous waste). The purpose of this notice is to solicit proposals from vendors that are interested in participating in the demonstration. EPA will select vendors to participate in the demonstration based on specified evaluation criteria.

**DATES:** Proposals must be submitted by **[insert date 6 weeks after publication in the Federal Register]**.

**ADDRESSES:** Vendors must submit an original and two copies of their proposal to H. Scott Rauenzahn, U.S. Environmental Protection Agency, 401 M Street, SW (5302W), Washington, DC 20460.

**FOR FURTHER INFORMATION CONTACT:** For information on this request for proposals, contact H. Scott Rauenzahn in the Office of Solid Waste at 703-308-8477 (FAX: 703-308-8433).

**SUPPLEMENTARY INFORMATION:** EPA plans to conduct a demonstration to determine whether PM and total Hg CEMS are sufficiently developed for use to document compliance with emission standards for hazardous waste combustors. The demonstration has two phases: (1) demonstration of ability to comply with the Agency's draft performance specifications; and (2) demonstration of long term endurance over a period of six months to one year.

#### **I. CEMS Performance Specifications**

The Agency's draft performance specifications contain requirements for: a one-week test period for calibration and zero drift; relative accuracy assessment against EPA manual reference methods; a calibration error check (if applicable); an interference test (if applicable); and demonstration to the EPA that other requirements, such as response time and data recorder scale, are met. The draft specifications are available on EPA's Technology Transfer Network (TTN). The files are PM\_PS.ZIP for PM and HG\_PS.ZIP for Hg. They can be found in the Emission Measurement Technical Information (EMTIC) bulletin board's "Continuous Emissions Monitoring" area.

The dial-in number for the TTN BBS is (919) 541-5742. That number can accommodate 14.4k kbps. Settings are 8 (Data), No parity, 1 (Stop), and Full duplex. The BBS can be reached on the internet via TELNET at "ttnbbs.rtpnc.epa.gov". The system is off-line Mondays from 8 am until 12 noon ET. For help using the

BBS, dial (919) 541-5384.

In addition, the draft performance specifications are available in the EPA RCRA Docket, Docket number F-95-RCSP-FFFFF. The docket is located at U.S. Environmental Protection Agency, Crystal Gateway, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The RCRA Docket is open from 9 a.m. to 4 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling 703-603-9230. The public may copy a maximum of 100 pages from any document at no cost. Additional copies cost \$0.15 per page.

## **II. Description of the Demonstration**

EPA seeks vendors to participate in the demonstration that will supply, install, and operate the CEMS at no charge to the government. The Agency will select participants based on their proposals according to the selection criteria discussed below. The test site(s) will be selected by EPA. EPA will also provide site coordination and oversight, and will conduct the manual method reference measurements.

The vendors will conduct the demonstration under EPA oversight, and will provide to EPA at no charge and before removing the CEMS from the test site all data and information on the design of the CEMS and its operation and maintenance during the demonstration. EPA will present the results of the

demonstration in a report.

At least one CEMS of each type (PM and total Hg) that participates in the demonstration will be selected for a long term (e.g., 6-12 month) endurance test.

The testing is scheduled to start in May 1996.

### **III. Vendor Proposals**

Proposals should contain the following: a detailed description of the design, operation, and maintenance of the CEMS; the performance specifications of the device (including calibration and zero drift, detection limits, range, and accuracy); a detailed description of the calibration procedure(s) and standards; vendor generated test data pertinent to CEMS performance and calibration; field data demonstrating performance; a description of how the vendor will meet the responsibilities of supplying, installing, and operating the CEMS; and a statement that the vendor accepts the conditions of the program as presented in this notice.

EPA will select vendors for participation in the demonstration using the criteria presented below. Vendors selected after a preliminary selection must submit a site-specific installation plan based on site-specific information that the Agency will provide. This plan should include details such as: (1) the strategy to be used for handling the problem of liquid aerosol if the site uses a low temperature, wet air

pollution control system; or (2) how adequate purge air and temperature would be maintained to prevent fouling of the optics or optical access, if applicable. In other words, the site-specific installation plan should describe all measures that would be taken to ensure compliance with the performance specifications if the site itself bought the CEMS.

EPA will review the site-specific installation plans and make a final selection of participants.

#### **IV. Selection Criteria**

EPA will use the following selection criteria as guidelines for choosing CEMSs to participate in the demonstration and endurance tests. Each CEMS will be scored on a scale of 1 to 10 on each criterion (10 being the best score), and a total score calculated using the weighting factors indicated in brackets. Starting from the highest scoring CEMS and working down, as many CEMSs will be selected for participation as possible commensurate with the resources available and the capacity of the test site to accommodate additional CEMSs.

A prerequisite for consideration is that a CEMS must be able to monitor PM or Hg continuously and record measurements over the specified averaging periods. For this effort, EPA defines a CEMS as sampling the stack gas continuously and making measurements every 15 seconds. One minute block averages are calculated by averaging the four previous 15-second readings. Rolling averages

are then calculated every minute using all one-minute averages obtained during the averaging period. The averaging periods are 10-minute, one-hour (60 minutes), and 2-hours (120 minutes) for PM, and 10 hours (600 minutes) for Hg. Only CEMSs that have a data availability factor of at least 90%<sup>1</sup> will be considered, unless no CEMSs can perform at that level.

*Phase I: Selection Criteria for the Demonstration Test*

1) *Commercial Availability.* The CEMS should be commercially available as documented by product literature, a list of installation locations, and references. A CEMS that has been installed and successfully field demonstrated to meet performance specifications similar to those referenced here at more than 100 stacks will receive the highest score. One that is available as a prototype only, with no firm commercialization plans in place that would lead to availability within the year, will receive the lowest score. [25%]

2) *Vendor Support.* The CEMS should be provided, installed, and operated by the vendor at no charge to the government. It is expected that the vendor will have personnel on-site to run the CEMS, carry out CD and ZD checks if needed, perform the CE check (if applicable), monitor CEMS performance

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<sup>1</sup> Since a source would not allowed to burn hazardous waste if the CEMS is not measuring and recording data, the CEMS must have a high data availability factor.

during RA testing, and provide any trouble shooting or maintenance that may be required. It is also expected that all data will be recorded and copies provided to EPA at the test site and at no charge: CD and ZD checks (if automatic adjustments are made the CD or ZD before adjustment or the amount of adjustment must be recorded), CE tests, RA tests, and interference checks. Willingness to guarantee all of the above will receive the highest score, none of the above the lowest score. [25%]

3) *Potential for CEMS to Meet Performance Specifications.*

Documentation supplied by the vendor in the proposal should provide an indication that the CEMS can be expected to: (1) meet the performance specifications for CD, ZD, CE, RA, interferences, recorder scale, and response time; and (2) meet detection limits of less than 7.0 mg/dscm for PM and 5.0 µg/dscm for Hg. Recorder scale (and span) should be greater than or equal to 210 mg/dscm and 1400 µg/dscm respectively for PM and Hg. The response time, the time interval between the start of a step change in the system input and the time when the data recorder displays 95 percent of the final stable value, should not exceed 2 minutes. Ability to meet all of the specifications will receive the highest score, ability to meet none of the specifications will receive the lowest score. [35%]

- 4) *Other Performance Requirements.* The CEMS design (as evaluated from information supplied in the proposal pertaining to a description of the CEMS and measurement principle and/or supplied test data) should be appropriate relative to the requirements of the performance specification and the application to monitoring stack emissions from hazardous waste combustors (i.e., hazardous waste incinerators and hazardous waste burning cement and light-weight aggregate kilns). For PM CEMSs, this means:
- a) The CEMS should be maximally sensitive to PM in the 0.1 to 10  $\mu$  size range; and
  - b) The CEMS should not be sensitive to liquid water aerosol.

For Hg CEMS this means:

- a) The CEMS vendor must have demonstrated, at a minimum, the ability of the CEMS to detect vapor phase Hg, Hg on PM, and HgCl<sub>2</sub>, and report the sum of these concentrations as total Hg; and
- b) No interferences (see performance specification).

[15%]

*Modifications to Installation Plan.* Vendors that the Agency selects based on the criteria discussed above for participation in the demonstration test must submit an installation plan. The proposed installation described in the plan must be appropriate



relative to the requirements of the performance specification and the application to monitoring stack emissions from the hazardous waste combustor that the Agency specifies. In particular, factors such as flue gas conditions (whether it is a saturated low temperature stream, for example) and purge requirements (flow rate and temperature to ensure that optics and access are not fouled) must be taken into account in the installation plan. If EPA determines that the proposed installation plan is not appropriate, the vendor may be required to revise the plan. If the vendor is unwilling to make the necessary changes, the CEMS may be dropped from the test program.

*Phase II: Selection Criteria for the Endurance Test*

The Agency will select CEMSS for participation in the long-term endurance test based on: (1) performance of the CEMS during the demonstration test in terms of ability to meet the performance specifications![[75%]; and (2) mainteooance requiremenus based!on vendor information and experience gained during the demonstration test [25%].

**V. Disclaimer**

Neither acceptance by EPA for participation in this demonstration nor successful completion of the demonstration shall guarantee that EPA or any other federal agency or government entity shall accept any instrument, or related procedure or technology, or any portion thereof, for the purpose

of the measurement of emissions from any regulated facility.

2/1/96

Date

E. Cotsworth, Deputy Director, for

Michael Shapiro

Director, Office of Solid Waste