# STANDARD FORM 83-I SUPPORTING STATEMENT
# FOR OMB REVIEW OF EPA ICR No. 1858.01 :

# INFORMATION COLLECTION REQUEST FOR
# ELECTRIC UTILITY STEAM GENERATING UNIT
# MERCURY EMISSIONS INFORMATION COLLECTION EFFORT

Emission Standards Division
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina  27711

September 3, 1998

PART A OF THE SUPPORTING STATEMENT FOR OMB FORM 83-I

ELECTRIC UTILITY STEAM GENERATING UNIT
MERCURY EMISSIONS INFORMATION COLLECTION EFFORT
INFORMATION COLLECTION REQUEST

## *1. Identification of the Information Collection*

### *(a) Title of the Information Collection*

"Electric Utility Steam Generating Unit Mercury Emissions Information Collection Effort." The Environmental Protection Agency (EPA) tracking number for this information collection request (ICR) is EPA ICR No. 1858.01. This is a new ICR.

### *(b) Short Characterization*

This information collection is being conducted by EPA's Office of Air and Radiation (OAR) to assist the Administrator of EPA in determining, as required by section 112(n)(1)(A) of the Clean Air Act, as amended (the Act), whether it is appropriate and necessary to regulate emissions of hazardous air pollutants (HAPs) by electric utility steam generating units under section 112. In the event that the Administrator determines that regulation of such units under section 112 is appropriate and necessary, the information being collected would also be used in developing an applicable emission standard. The information would also be made available to the public.

There will be three components to the information collection. Information necessary to identify all coal-fired units is publicly available for facilities owned and operated by publicly-owned utility companies, Federal power agencies, rural electric cooperatives, and investor-owned utility generating companies. However, similar information is not publicly available for nonutility generators qualifying under the Public Utility Regulatory Policies Act (PURPA). Such units include, but may not be limited to, independent power producers (IPPs), qualifying facilities, and cogenerators. To obtain the information necessary to identify all coal-fired electric utility steam generating units in this sector, and to confirm information from the other sector, for both the coal sampling and analysis (second component) and for selection of units for speciated stack sampling (third component), the Agency will in the first component of the information collection solicit from all coal-fired electric utility steam generating units, under authority of section 114 of the Act, information relating to the type of coal used, the method of firing the coal, and the method of sulfur dioxide ($SO_2$) control.

The second component consists of acquiring accurate information on the amount of mercury contained in the as-fired coal used by each electric utility steam generating unit (as defined in section 112(a)(8) of the Act, but generally those with a capacity greater than 25 megawatts electric [MWe]), as well as accurate information on the total amount of coal burned by each such unit. The information will be obtained by requiring, through the issuance of a letter pursuant to the authority of section 114 of the Act, the owner/operator of each such unit to provide the results of analyses performed, in accordance with a demonstrably acceptable protocol, to determine the mercury content of the coal to be fired in that unit and to submit the results of those analyses to EPA's OAR, Office of Air Quality Planning and Standards, Emission Standards Division (ESD). The letter will also require each owner/operator to submit data on the total amount of coal received. This approach is based on available knowledge that such data are available from the information used to verify compliance with the coal delivery contract; that samples taken to ensure this compliance are taken by the supplier after any coal cleaning or by the electric utility steam generating unit at point of receipt; and that no further cleaning of the coal is undertaken prior to the coal being fired to the boiler. Thus, "as-shipped" or "as-received" coals are equivalent to "as-fired" coals and mercury analyses from such samples would be representative of the mercury entering the boiler.

The third component consists of requiring, again through the issuance of a letter pursuant to the authority of section 114 of the Act, the owners/operators of a total of 138 coal-fired electric utility steam generating units selected at random from 15 categories on a statistically weighted basis to conduct, sometime during a 1-year period, in accordance with an EPA-approved protocol, simultaneous before and after control device stack testing. The testing is to consist of three runs using paired sampling trains at each sampling location, and is to be in accordance with a specified mercury speciation method. The owner/operator of each selected electric utility steam generating unit will also be required to collect and analyze, in accordance with an acceptable procedure, a statistically appropriate number of coal samples from the coal fed to the pulverizer during each stack test. The results of the stack tests and the coal analyses will again be required to be submitted to the ESD.

The EPA estimates the cost of the information verification component of the information collection to be $36,838; the cost of the mercury content and coal use data component to be $12,873,079; and the cost of the stack testing and coal sampling component to be $7,304,449, for a total cost of $20,214,365.

The owner/operator of each coal-fired electric utility steam generating unit required to report the results of analyses of coal samples will be required to keep records: i) documenting that each coal sample analyzed was a sample taken for contract verification purposes; ii) establishing proper chain of custody for each coal sample; iii) describing the quality assurance/quality control (QA/QC) procedures followed in preparing each coal sample for analysis and performing the required analysis; iv) setting forth the results of the analysis performed on each coal sample; and, v) documenting the volume of coal received that is represented by each sample.

The owner/operator of each coal-fired electric utility steam generating unit required to conduct stack testing and concurrent coal sampling and analysis will be required to keep records: i) documenting that coal samples taken during each stack test run were obtained in accordance with an approved sampling protocol; ii) establishing proper chain of custody for each coal sample; iii) describing the QA/OC procedures followed in preparing each coal sample for analysis and performing the required analysis; iv) setting forth the results of the analyses performed on each coal sample; v) documenting that each stack test was conducted in accordance with an approved testing protocol; and, vi) setting forth the results of each stack test.

All records required under the proposed information collection must be retained for 3 years.

## *2. Need for and Use of the Collection*

### *(a) Need/Authority for the Collection*

Section 112(n)(1)(A) of the Act requires the EPA to perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units of HAPs after imposition of the requirements of the Act and to prepare a Report to Congress containing the results of the study. The Agency is to proceed with rulemaking activities under section 112 to control HAP emissions from electric utility steam generating units if EPA finds such regulation is appropriate and necessary after considering the results of the study. The study has been completed and the Final Report to Congress was issued on February 24, 1998.

In the Final Report to Congress, the EPA stated that mercury is the HAP of greatest potential concern for coal-fired electric utility steam generating units and that additional research and monitoring are merited. The EPA also listed a number of research needs related to such mercury emissions. These include obtaining additional data on the mercury content of various types of coal as fired in electric utility boilers and additional data on mercury emissions (e.g., how much is emitted from various types of units; how much is divalent vs. elemental mercury; and how do factors such as control device, fuel type, and plant configuration affect emissions and speciation).

As indicated above, in addition to requiring the Administrator to perform a study of the hazards to public health reasonably anticipated to occur as a result of HAP emissions by electric utility steam generating units after imposition of the requirements of the Act and to report the results of that study to Congress, section 112(n)(1)(A) further requires the Administrator to regulate electric utility steam generating units under section 112 of the Act if the Administrator finds that such regulation is appropriate and necessary after "considering the results of the study." The Administrator interprets the quoted language as indicating that the results of the study are to play a principle, but not exclusive, role in informing the Administrator's decision as to whether it is appropriate and necessary to regulate electric utility steam generating units under section 112. The Administrator believes that in addition to considering the results of the study, she may consider any other available information in making her decision. The Administrator also believes that she is authorized to collect and evaluate any additional information which may be necessary to make an informed decision.

After carefully considering the Final Report to Congress, the Administrator has concluded that obtaining additional information which may be helpful to inform this decision, as well as possible subsequent decisions, is appropriate. In the Final Report to Congress the EPA stated that at this time, the available information, on balance, indicates that electric utility steam generating unit mercury emissions are of sufficient potential concern for public health to merit further research and monitoring. The EPA acknowledged that there are substantial uncertainties that make it difficult to assess electric utility steam generating unit mercury emissions and controls, and that further research and/or evaluation would be needed to reduce those uncertainties. The EPA believes that among those uncertainties are: i) the actual cumulative amount of mercury being emitted by all electric utility steam generating units on an annual basis; ii) the speciation of the mercury which is being emitted; and iii) the effectiveness of various control technologies in reducing the volume of each form of mercury which is emitted (including how factors such as control device, fuel type, and plant configuration affect emissions and speciation).

To address the question of the cumulative amount of mercury actually being emitted by all electric utility steam generating units on an annual basis, the EPA believes that it is necessary to require the owners/operators of all such units to provide information on the mercury content of the coal received for each unit, as well as the amount of coal received for each unit. The EPA can then apply appropriate correction factors to this data to calculate the amount of mercury emitted on an annual basis by each unit. Thus, the mercury emission data collection effort includes a requirement for all coal-fired electric utility steam generating units as defined in section 112(a)(8) of the Act to provide analyses of the mercury content of the coal which they receive and report the results of that analysis together with the volume of coal received. Section 112(a)(8) of the Act defines electric utility steam generating unit as follows:

> The term "electric utility steam generating unit" means any fossil fuel fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale shall be considered an electric utility steam generating unit.

When preparing the Final Report to Congress, the Agency had available mercury emission data from a number of utility boilers. These data included measurements of the mercury emitted during various stages of the process (e.g., exiting the boiler, exiting the various control devices).

Research conducted during the period between the acquisition of these data and the release of the report has highlighted the importance of the specific valence state (i.e., species) of the emitted mercury on the ability of a particular control device to remove mercury from the exhaust gas stream. During the same time period, advances have been made in emission testing methodologies that more accurately differentiate among the various species of mercury that may be emitted from an electric utility steam generating unit. The mercury emission data gathering effort, therefore, includes provisions for acquiring additional speciated emission data so that the correlation between mercury in the coal, the species of mercury formed, and the mercury removal performance of various control devices may be further evaluated.

The information will be collected under authority of section 114 of the Act. Section 114(a) states, in pertinent part:

> For the purpose...(iii) carrying out any provision of this Chapter...(1) the Administrator may require any person who owns or operates any emission source...to-...(D) sample such emissions (in accordance with such procedures or methods, at such locations, at such intervals, during such periods and in such manner as the Administrator shall prescribe); (E) keep records on control equipment parameters, production variables or other indirect data when direct monitoring of emissions is impractical...(G) provide such other information as the Administrator may reasonably require...

Section 114 is set forth in its entirety in Attachment 1.

*(b)* *Use/Users of the Data*

The data collected pursuant to the mercury emissions collection effort, along with other information, will be used by the Agency in evaluating whether regulation of electric utility steam generating units under section 112 of the Act is appropriate and necessary. Specifically, the data will respond in part to the two research needs noted above, providing the Agency with updated information on the mercury content of coals fired by, and on the speciation and controllability of mercury emitted from, electric utility steam generating units. The data will be added to the existing database and will be used to further evaluate the emission of mercury by electric utility steam generating units. In the event that the Administrator determines that it is appropriate and necessary to regulate electric utility steam generating unit HAP emissions under section 112, the data will be used in the development of an applicable emission standard(s).

### ***3. Nonduplication, Consultations, and Other Collection Criteria***

*(a)* *Nonduplication*

The EPA recognizes that some of the information requested as part of the mercury emission data gathering effort (e.g., amount of coal fired per year) may already be included in the submittals being made by individual utilities pursuant to various requirements of the Department of Energy/Energy Information Administration (e.g., Form 423, Form 767). Electric utility steam generating unit owners/operators are given the option of submitting already available information if that information suits the needs of, and is of sufficient quality for, this data gathering effort. However, the Agency does not believe that it can rely entirely on the future availability of this information because of actions underway to cause some, or all, of this information to be treated as confidential business information. Other information requested pursuant to the mercury emissions data gathering effort (e.g., mercury content of coal received; speciation of mercury emissions; effectiveness of various control devices at removing mercury) is not believed to be available from other sources and, therefore, will be used to supplement the information which may currently be available from other sources.

The EPA expects that the information requested as part of this effort will only be required for one year. The Agency will shortly propose a regulation to lower the Emergency Planning and Community Right-to-Know Act (EPCRA) section 313 activity thresholds for reporting releases of certain toxic chemicals, including mercury and mercury compounds, to the Toxic Release Inventory (TRI). The EPA plans to begin collecting information on mercury emissions from electric utility steam generating units under the new threshold in the year 2000.

Under EPCRA section 313, facilities are not required to monitor their emissions to report to TRI, but may use readily available data (including monitoring data) collected pursuant to other provisions of law. This ICR is authorized by section 114 of the Clean Air Act, which allows EPA to require electric utility steam generating unit owners and operators to perform analyses that they may not currently perform and, therefore, that would allow emissions estimates that may be more precise than those that would otherwise be provided under EPCRA section 313. Facilities that have emissions information gathered through actual emissions monitoring or testing would be required to use the results of such monitoring or testing in compiling their reports under EPCRA section 313. Other facilities would be required to apply the results of the stack testing performed under this ICR (i.e., the publicly available data and the emissions factors developed from those data) to estimates of the mercury content of coal when reporting mercury releases to the TRI.

A final decision has not yet been made as to the new threshold for mercury under EPCRA section 313. If, after providing an opportunity for notice and comment, the EPA decides on a threshold for mercury that omits a significant portion of coal-fired power plants, the EPA may require that information be submitted under section 114 of the Clean Air Act for additional years. Also, if for any reason, information collection on mercury emissions under the new lower threshold for mercury is delayed beyond the year 2000, the EPA may require the coal sampling, but not the stack testing beyond one year.

*(b)* *Public Notice Required Prior to ICR Submission to OMB*

This ICR was submitted for public review as required by the Paperwork Reduction Act of 1995 (PRA) and the subsequent rule issued by the Office of Management and Budget (OMB) on August 29, 1995 (60 FR 44978). The Federal Register notice required under 5 CFR 1320.8(d), soliciting comments on this collection of information, was published on April 9, 1998 (63 FR 17406) (see Attachment 2); over 120 comments were received. A summary of comments received and EPA's responses to those comments is presented in Attachment 3.

*(c)* *Consultations*

Significant input and information was received from the affected industry, State and local governments, environmental groups, the public, and other Federal agencies during development of the Final Report to Congress. The comments received were reviewed and utilized in the development of the Final Report to Congress. The public comments are located in the docket for the study (Docket A-92-55).

A public meeting was held on May 21, 1998 to discuss the proposed mercury emission data gathering effort. At the public meeting, the industry, other potentially interested Federal agencies, the environmental community, and the general public were afforded an opportunity to comment on the proposed mercury emissions data gathering effort. This opportunity was in addition to that provided by the Federal Register notice concerning the availability of the ICR for public review and comment.

*(d)* *Effects of Less Frequent Collection*

This ICR requires the owner/operator of each facility at which a coal-fired electric utility steam generating unit is located to provide analyses for each coal shipment received from each distinct coal supplier to that facility. The frequency of the analyses would depend on the frequency that samples are collected to determine compliance with the coal contract. Since the amount of coal burned at any given facility is largely based on the size of the facility and the total megawatt output, collection of data representative of the coal received will allow a true correlation to be drawn on the mercury content of the coal burned. Any less frequent collection could potentially still be an undue burden on smaller facilities while under sampling the larger facilities. An unrepresentative collection of data from less frequent collection could cause an unnecessary determination to regulate.

For the stack testing component of this information collection, one of the most important problems in sample design is that of determining how large a sample is needed for the estimates obtained in those selected samples (or units) to be reliable enough to meet the objectives of the study. In the determination of sample sizes for studies where virtual certainty (i.e., a high level of reliability) is needed, a level of 95 percent confidence is established to assure the objectives of the study will be met. For this particular collection effort, 138 samples will need to be collected out of the estimated total population of 1,141 units (boilers), which will each be allocated into one of 15 stratum (i.e., categories) that has been established. Since assessing only one sample would not provide a basis for analysis, each category that would have had only one sample taken from it will be changed to a three-sample set in order for basic statistical calculations to be made. To collect the most representative data, triplicate simultaneous before and after control device stack sampling with a specified mercury speciation method will be collected once per selected unit within a one year period using a paired sampling train at each location.

*(e)* *General Guidelines*

This ICR adheres to the guidelines for Federal data requestors, as provided at 5 CFR 1320.6.

*(f)* *Confidentiality*

*(i)* *Confidentiality*. Respondents will be required to respond under the authority of section 114 of the Act. If a respondent believes that disclosure of certain information requested would compromise a trade secret, it should be clearly identified as such and will be treated as confidential until and unless it is determined in accordance with established EPA procedure as set forth in 40 CFR Part 2 not to be entitled to confidential treatment. All information submitted to the Agency for which a claim of confidentiality is made will be safeguarded according to the Agency policies set forth in Title 40, Chapter 1, Part 2, Subpart B -- Confidentiality of Business Information (see 40 CFR 2; 41 FR 36902, September 1, 1976; amended by 43 FR 39999, September 28, 1978; 43 FR 42251, September 28, 1978; 44 FR 17674, March 23, 1979). Any information subsequently determined to constitute a trade secret will be protected under 18 U.S.C. 1905. If no claim of confidentiality accompanies the information when it is received by the EPA, it may be made available to the public without further notice (40 CFR 2.203, September 1, 1976). Because section 114© of the Act exempts emission data from claims of confidentiality, the emission data provided may be made available to the public. Therefore, emissions data should not be marked confidential. A definition of what the EPA considers emissions data is provided in 40 CFR 2.301(a)(2)(i).

*(ii)* *Sensitive questions*. This section is not applicable because this ICR does not involve matters of a sensitive nature.

## ***4. The Respondents and the Information Requested***

*(a)* *Respondents/SIC Codes*

Respondents affected by this action are owners/operators of coal-fired electric utility steam generating units as defined by section 112(a)(8) of the Act. For the purposes of this information collection, “coal” includes anthracite, bituminous, subbituminous, lignite, and waste coals (generally termed culm and gob). The standard industrial classification (SIC) code for the respondent class is 4911.

*(b)* *Information Requested*

*(i)* *Data items, including recordkeeping requirements*. The proposed mercury emissions data gathering effort has three components: i) identification of nonutility generators

meeting the definition of electric utility steam generator under section 112(a)(8) of the Act and confirmation of certain information from all units; ii) analyses of as-fired coal; and iii) mercury speciation stack testing. The first component would apply to all coal-fired electric utility steam generating units, including all nonutility generators identified as utilizing combustion. The second component would apply to the owners/operators of all coal-fired electric utility steam generating units meeting the section 112(a)(8) definition. The third component would apply to a limited number of entities within specified subsets. Attachment 4 presents a copy of the questionnaire that would be mailed to each owner/operator.

The first component, identification of nonutility generators meeting the section 112(a)(8) definition and confirmation of information from all units, would require each electric utility steam generating units, including nonutility generators, to provide information to the Agency that would allow identification of coal-fired units for the second component and information such that the units could be categorized for selection for the third component. This information is not currently publicly available for nonutility units.

The second component, analyses of as-received coal, would require the owner/operator of each facility at which a coal-fired electric utility steam generating unit is located to provide analyses for each coal fired from each distinct coal supplier to that facility. The frequency of the analyses would depend on the mode of shipment used to receive the coal.

(1) Shipment by rail car, barge, or ship. Owners/operators of units receiving coal by rail car (i.e., unit train, super unit train, or individual car), barge (i.e., barge tow or individual barge), or ship would be required to provide certain information about each shipment, and the results of particular analyses of a composited coal sample that represents each particular coal shipment that is taken and maintained to determine compliance with the respective coal contract.

(2) Shipment by truck. Owners/operators of units receiving coal by truck would be required to provide certain information about each shipment received and the results of particular analyses of a composited coal sample that represents each particular shipment that is taken and maintained for normal coal delivery contract verification purposes. It is expected that

these analyses would be performed on samples composited from individual truck samples that are taken to determine compliance with individual supplier contracts.

(3) Shipment by conveyor. Owners/operators of units receiving coal by conveyor belt (i.e., “mine-mouth” units) would be required to provide certain information about coal received in increments not to exceed 10,000 tons. For each increment, they are also required to report the results of particular analyses of corresponding coal samples taken for contract verification purposes.

Coal samples collected for contract verification purposes that represent “as-received,” (and, as noted earlier, also represent “as-shipped” and “as-fired”) coal would be analyzed. The owner/operator would also be required to document and provide the amount and type of each coal received for each unit and identify the source of each coal (i.e., State, county, seam, etc.). Each owner/operator would be required to provide the proximate and ultimate analyses of each coal obtained for contract verification purposes and provide analyses for mercury and chlorine content. To be accepted, all analyses must be shown to be: i) traceable from the supplier to the unit; ii) representative of as-received or as-fired coal used during the period in question (i.e., cleaned rather than raw coal and no further cleaning performed after receipt of the coal); and iii) obtained using standardized sampling and analytical procedures following appropriate QA/QC procedures. Reports of all analyses would be due to the EPA 45 days after the close of the preceding quarter.

The third component, stack testing for mercury speciation, would require triplicate simultaneous before and after control device stack sampling with a specified mercury speciation method using paired emission sampling trains at each location. This sampling would be done on one occasion during a 1-year period. During the stack testing, collection and analyses of three as-fired coal samples taken at intervals throughout the testing period would be required. The results of each series of stack tests and coal sample analyses would be required to be reported to the EPA by using a specified standardized electronic format within 45 days of the date of testing. Specified QA/QC procedures would be required for each part of the mercury emissions data collection effort.

The Agency requires that for all environmental data operations (EDOs) a Quality Assurance Project Plan (QAPP) be written to document the type and quality of data needs for environmental decisions. An EDO is any work performed to obtain, use, or report information pertaining to environmental processes and conditions. For the purposes of the stack testing requirement, a generic QAPP will be sent with the section 114 letter requesting a particular unit to be tested. Any modifications that need to be made to this QAPP for any given facility should be sent to the EPA for review.

Although a separate QAPP for the coal sampling effort should be established, due to the options each facility has been given to collect mercury-in-coal information and the various techniques any given laboratory could use in analyzing a coal sample for mercury, a generic QAPP would be impossible to develop. In lieu of requiring individual QAPPs to be developed, each laboratory conducting an analysis for mercury in coal will first be required to analyze a National Institutes of Standards and Technology (NIST) standard reference material (SRM) to within +/-15 percent of the true value and report these results.

*(ii)* *Respondent activities*. The activities a respondent must undertake to fulfill the requirements of the information collection are presented in Table 1. These include: i) read instructions; ii) provide source information; iii) secure stack test contractor and review proposal (if one of the units selected); iv) conduct coal sampling (if one of the units selected for stack testing); v) conduct coal analyses; vi) conduct stack testing (if one of the units selected); vii) monitor stack testing (if one of the units selected); viii) process, compile, and review coal sampling data for accuracy and completeness; ix) review stack sampling data for accuracy and completeness (if one of the units selected); x) submit coal sampling data; and xi) submit stack sampling data (if one of the units selected).

## 5. *The Information Collected--Agency Activities, Collection Methodology, and Information Management*

*(a)* *Agency Activities*

A list of activities required of the EPA is provided in Table 2. These include: i) develop questionnaire; ii) review and analyze Part I responses; iii) develop generic QAPP; iv) determine sites to be emission tested; v) review and comment on stack sampling test plans (and QAPPs, if modifications are received to accommodate a unit at any particular facility); vi) answer respondent questions; vii) audit stack tests; viii) review coal analysis data for accuracy and completeness; ix) review stack sampling data for accuracy and completeness; x) analyze coal sampling data; xi) analyze stack sampling data; and xii) analyze requests for confidentiality.

*(b)* *__Collection Methodology and Management__*

In collecting and analyzing the information associated with this ICR, the EPA will use personal computers and applicable database software. The EPA will ensure the accuracy and completeness of the collected information by reviewing each submittal. The information collected pursuant to the mercury emissions data gathering effort will be maintained in a computerized database. To better facilitate uniformity in the format of the reports that are received, and, thus, increase the ease of database entry, standardized reporting forms will be developed and distributed.

*(c)* *__Small Entity Flexibility__*

All respondents required to comply with the mercury emissions data gathering effort will be subject to the same requirements. The EPA expects that a portion of the respondents could be small governmental jurisdictions; however, any individual small entity would be expected to receive only one section 114 letter so their response burden will be minimized.

*(d)* *__Collection Schedule__*

The EPA anticipates issuing the first section 114 letters by November 15, 1998. These section 114 letters would require the owner/operator of each coal-fired electric utility steam generating unit meeting the section 112(a)(8) definition to: i) begin the required coal sampling and analysis by January 1, 1999; ii) submit the first quarterly report on the results of the coal sampling and analysis by May 15, 1999; iii) complete all required coal sampling and analysis by December 31, 1999; and, iv) submit a final report on the results of the required coal sampling and analysis by February 15, 2000. The second section 114 letter will require the owner/operator of each of the 138 selected coal-fired electric utility steam generating units to: i) submit to EPA for approval a stack testing and coal sampling and analysis protocol, together with any modifications to the QAPP, if necessary, and a schedule for completing the required stack testing and coal sampling and analysis, by April 15, 1999; ii) commence stack testing, including concurrent coal sampling and analysis, by the date specified in the EPA approved facility-specific schedule; and iii) complete stack testing and concurrent coal sampling and analysis by May 31, 2000.

***6. Estimating the Burden and Cost of the Collection***

*(a) Estimating Respondent Burden*

The average annual burden estimate for reporting and recordkeeping requirements are presented in Table 1 for all recipients. These numbers were derived from estimates based on the EPA's experience with other emission test programs and other information collections. These estimates represent the average annual burden that will be incurred by the recipients.

*(b) Estimating Respondent Costs*

Table 2 presents estimated costs for the required recordkeeping and reporting activities. Labor rates and associated overhead costs are based on estimated hourly rates of $30.16 for technical personnel, $34.39 for management personnel, and $16.09 for clerical personnel. These values were taken from the Bureau of Labor Statistics Internet website and reflect the latest values available (March 1998).

*(c) Estimating Agency Burden and Cost*

The costs the Federal Government would incur are presented in Table 4. Labor rates and associated costs are based on the estimated hourly rates of $25.20 for technical personnel (GS-12, step 5); $41.66 for management personnel (GS-15, step 5); and $14.21 for clerical personnel (GS-7, step 5).

*(d) Estimating the Respondent Universe and Total Burden and Costs*

The potential respondent universe consists of 1,100 coal-fired utility facilities. Of these, all would be required to complete Part I, 766 would be required to conduct coal sampling, and 138 would be required to conduct stack testing. For the purposes of estimating burden, all units believed to utilize combustion and greater than 20 MWe identified on the publicly available list of nonutility generators (703 units) would be required to complete Part I to confirm how many are coal-fired (fuel use by nonutility generators is not publicly available information). For the purposes of estimating burden for the second and third components, it has been assumed that one-half of these units (352 units) are coal fired.

*(e)* *Bottom Line Burden Hours and Costs Tables*

*(i)* *Respondent tally*. The bottom line industry burden hours and costs, presented in Tables 1 and 2, are calculated by summing the person-hours column and by summing the cost column.

The annual burden and cost to the industry is 45,445 hours and $20,214,365 (see Tables 1 and 2).

The average annual base reporting and recordkeeping burden and cost to the industry for this information collection for facilities subject to the first component of the mercury emissions data gathering effort is 1,266 hours and $36,838 (see lines 1 and 2 of Tables 1 and 2). The average annual base reporting and recordkeeping burden and cost to the industry for this information collection for facilities having units subject to the second component of the mercury emissions data gathering effort is 31,712 hours and $12,873,079 (see Tables 5 and 6). The average annual base reporting and recordkeeping burden and cost to the industry for this information collection for units subject to the third component of the mercury emissions data gathering effort is 12,467 hours and $7,304,449 (see Tables 7 and 8).

*(ii)* *Agency tally*. The bottom line Agency burden and cost, presented in Tables 3 and 4 is calculated in the same manner as the industry burden and cost. The estimated annual burden and cost are 82,227 hours and $2,057,379.

*(iii)* *The complex collection*. This ICR is a simple collection; therefore this section does not apply.

*(iv)* *Variations in the annual bottom line*. This section does not apply as this is a one-time collection.

*(f)* *Reasons for Change in Burden*

This is the initial estimation of burden for this information collection; therefore, this section does not apply.

*(g)* *Burden Statement*

Tables 1 and 2 present the annual respondent burden for those electric utility steam generating units required to comply with the first component of the mercury emissions data gathering effort, submission of unit information. Tables 5 and 6 present the annual respondent burden for those electric utility steam generating units required to comply with the second component of the mercury emissions data gathering effort, analyses of as-received coal. Tables 7 and 8 present the average annual respondent burden for those electric utility steam generating units required to comply with the third component of the mercury emissions data gathering effort, mercury speciation stack testing. The total annual reporting and recordkeeping burden for the first component of the mercury emissions data gathering effort is estimated to be 1,266 hours and $36,838 (1.2 hour and $33 per respondent for 1,100 respondents). The total annual reporting and recordkeeping burden for the second component of the mercury emissions data gathering effort is estimated to be 31,712 hours and $12,873,079 (41 hours and $16,806 per respondent for 766 respondents). The total annual reporting and recordkeeping burden for the third component of the mercury emissions data gathering effort is estimated to be 12,467 hours and $7,304,449 (90 hours and $52,931 per respondent for 138 respondents).

This ICR does not include any requirements that would cause the respondents to incur either capital or start-up costs. The EPA has assumed that all respondents will contract (i.e., purchase services/operation and maintenance costs) for the coal analyses and for the stack testing. These costs are $11,991,000 for the coal analyses and $6,900,000 for the stack testing.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information that is sent to ten or more persons unless it displays a currently valid OMB control number. The OMB control numbers for EPA's approved information collection requests are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Office of Policy, Regulatory Information Division, U.S. Environmental Protection Agency (2137); 401 M Street SW; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street NW; Washington, DC 20503; marked "Attention: Desk Officer for the EPA." Include the EPA ICR number in any correspondence.

PART B OF THE SUPPORTING STATEMENT FOR OMB FORM 83-I

ELECTRIC UTILITY STEAM GENERATING UNIT
MERCURY EMISSIONS INFORMATION COLLECTION EFFORT
INFORMATION COLLECTION REQUEST

1. Respondent Universe

In 1994, the number of coal-fired facilities owned and operated by publicly-owned utility companies, Federal power agencies, rural electric cooperatives, and investor-owned utility generating companies comprised 1,038 units (boilers) greater than 25 MWe, according to the database used for the utility toxics study, Steam: Its Generation and Use (Babcock and Wilcox), and the Department of Energy (DOE)/Energy Information Administration (EIA) database. Information available from 1996 DOE/EIA databases, including the Clean Coal Technology List, indicated some updates that needed to be made to the information provided in the 1994 database. All decisions regarding the stratification of the data employed in this study were based on the aforementioned databases, corrected to the extent possible using the 1996 databases and comments received. Final stratification and unit selection for stack testing will be based on the information requested in the first component of the information collection.

Due to the lack of publicly available, Federal-level reporting requirements for nonutility generators analogous to that available for the units noted above, only a limited amount of information encompassing all types of nonutility generators (e.g., cogenerators, IPPs, and industrial facilities meeting the section 112(a)(8) definition) is currently available. The limited publicly available information obtained by the Office of Air and Radiation's (OAR's) Acid Rain Division (ARD) indicated that potentially 703 nonutility generators exist. Although it is anticipated that not all of these units are coal-fired facilities, all 703 were used for preliminary considerations regarding the number of units required to complete Part I. Information from these facilities will be requested for stratification and sampling purposes. For the purposes of estimating the number of units for the second and third components, it has been assumed that one-half of these units (352 units) are coal fired.

2. Respondent Universe Stratification

Although the actual variables that affect mercury speciation are still being determined in on-going research efforts, two variables that appear to have an effect are the method of mechanical sulfur dioxide ($SO_2$) control (i.e., does not include use of coal blending or low sulfur coals) and coal source. For the purposes of grouping the coal-fired electric utility steam generating units into categories, these two variables were used so that a more representative sample of coal-fired units can be selected for testing. For both categories of electric utility steam generating units, the method of $SO_2$ control is defined as either a dry-scrubber (of any type/model), wet-scrubber (of any type/model), fluidized bed combustion (FBC; any type), coal gasification (any type; termed "coal gas"), or no mechanical control at all (termed "no scrubber"). Coal source is defined as bituminous (including anthracite and the waste coals culm and gob), subbituminous, or lignite.

According to Babcock and Wilcox, lignite is the lowest rank coal and is relatively soft and brown to black in color.[1] The volatile content is high and, therefore, lignite ignites easily. Subbituminous coals are black, having little of the plant-like texture and none of the brown color associated with the lower rank lignite coal. Subbituminous coals generally have less ash and are cleaner burning than lignite coals. Bituminous coal is the rank most commonly burned in electric utility boilers and appears black with banded layers of glossy and dull black. The volatile content is lower than that of subbituminous and lignite coals. Anthracite, which is the highest rank of coal, is shiny black, hard, and brittle, with little appearance of layering. Anthracite has a low volatile content which makes it a slow burning fuel but one that burns with a hot, clean flame. For the purposes of grouping, anthracite coal was combined with bituminous coal because of the limited use of anthracite coal in coal-fired electric utility steam generating units.

The 15 defined categories that each coal-fired electric utility steam generating unit (excluding nonutility generators) would fall into, and the number of units in each category, are as shown on the following table. For the publicly-owned utility companies, no units were identified for categories XIV or XV. It is anticipated that units from the nonutility generators will be

---

[1] Steam: Its Generation and Use. Edited by S.C. Stultz and J.B. Kitto. 40th Edition. The Babcock & Wilcox Company, Barberton, Ohio. 1992.

| Category | Scrubber type/coal source | Total number of units |
|---|---|---|
| I | Dry Scrubber/Bituminous Coal | 5 |
| II | Dry Scrubber/Lignite Coal | 4 |
| III | Dry Scrubber/Subbituminous Coal | 14 |
| IV | No Scrubber/Bituminous Coal | 605 |
| V | No Scrubber/Lignite Coal | 9 |
| VI | No Scrubber/Subbituminous Coal | 211 |
| VII | Wet Scrubber/Bituminous Coal | 119 |
| VIII | Wet Scrubber/Lignite Coal | 14 |
| IX | Wet Scrubber/Subbituminous Coal | 46 |
| X | Fluidized Bed Combustion/Bituminous Coal | 3 |
| XI | Fluidized Bed Combustion/Lignite Coal | 4 |
| XII | Fluidized Bed Combustion/Subbituminous Coal | 1 |
| XIII | Coal Gas/Bituminous Coal | 3 |
| XIV | Coal Gas/Lignite Coal | 0 |
| XV | Coal Gas/Subbituminous Coal | 0 |

identified for all of these categories. Exact units for each of these categories cannot be provided until proper information is collected.

Table 9 presents the list of electric utility steam generating units placed in their respective categories, based on available information (as of 1996). Table 10 presents the population of assumed coal-fired nonutility units larger than 20 MWe (as of 1996).

3. Sample Size

One of the most important problems in sample design is that of determining how large a sample is needed for the estimates obtained in those selected samples (or units) to be reliable enough to meet the objectives of the study. In the determination of sample sizes for studies where virtual certainty (i.e., a high level of reliability) is needed, a level of 95 percent confidence is established to assure the objectives of the study will be met. Sample size (n) is determined by:

$$\frac{9NP_y(1-P_y)}{(N-1)(.0556)^2\,P_y^{\,2} + 9P_y(1-P_y)}$$

Setting N = 1,390, since there are 1,038 publicly-owned utility units plus 352 (assumed) potential coal-fired nonutility generator units, and $P_y = 0.95$, which provides 95 percent confidence in the sample size obtained, the sample size n = 138.104 or 138, given the number must be rounded to the nearest integer.

Given the 15 viable categories from which units to be sampled can be selected, the units to be sampled can be selected in a couple different ways: i) equally (or relatively so) among the 15 categories, or ii) proportional allocation of units to be sampled to stratified population (units within each category). In proportional allocation, the sampling fraction ($n_h/N_h$) is specified to be the same for each stratum (category). The number of units ($n_h$) taken from each stratum is given by:

$$n_h = \frac{(N_h)(n)}{N}$$

where $N_h$ is the number of units in each stratum, n is the total number of units to be sampled (i.e., 138), and N is the total number of units (i.e., 1,390). Since assessing only one sample would not provide a basis for analysis, each category that would have had only one sample taken from it will be changed to a three-sample set in order for basic statistical calculations to be made. Since only 1,038 of the units have currently been stratified and are contingent on verification of their unit information, the actual number of samples to be obtained from each stratum cannot be determined at this time.

4. Respondent Sample Collection

A random selection process will be used to determine which units are required to participate in this testing program. If possible, once a unit from a particular plant (site) has been selected, no other unit(s) at that plant (site) will be chosen for that particular category (i.e., some plants have units with different methods of $SO_2$ control or that burn coal from different sources). This will provide us with more information from a larger number of plants given all plant operations are not the same due to differing environmental conditions (e.g., weather), equipment, and load (e.g., amount of coal burned per unit of time). Each plant (site) will also have a different mix of coal, since most plants obtain coal from multiple sources (i.e., different States and/or different seams of coal), and testing at multiple plants (sites) will provide additional information on the variability of emissions across the mix of coals.

5. Response Rates

Since the information will be requested pursuant to the authority of section 114 of the Act, EPA anticipates that all respondents requested to submit information will do so.

TABLE 1. ELECTRIC UTILITY STEAM GENERATING ICR RESPONDENT BURDEN HOUR ESTIMATE - TOTAL

| **Collection activities** | **Burden hours**[2] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical hours | Management hours | Clerical hours | Total |
| 1. Read instructions. | 0.5 | 1 | 0.5 | 1,100 | 550 | 28 | 55 | 633 |
| 2. Complete and submit Part I. | 0.5 | 1 | 0.5 | 1,100 | 550 | 28 | 55 | 633 |
| 3. Secure emission test contractor/review proposal. | 40 | 1 | 40 | 152[3] | 6,080 | 304 | 608 | 6,992 |
| 4. Coal sampling with stack testing.[4] | 0.5 | 3 | 1.5 | 138 | 207 | 10 | 21 | 238 |
| 5. Conduct coal analyses. | 0 | 156[5] | 0 | 766 | 0 | 0 | 0 | 0 |
| 6. Coal analyses with stack sampling. | 0 | 3 | 0 | 138 | 0 | 0 | 0 | 0 |
| 7. Conduct stack testing. | 0 | 1 | 0 | 138 | 0 | 0 | 0 | 0 |
| 8. Monitor stack testing. | 24 | 1 | 24 | 138 | 3,312 | 166 | 331 | 3,809 |
| 9. Process/compile/review coal sampling data for accuracy and completeness. | 8 | 4 | 32 | 766 | 24,512 | 1,226 | 2,451 | 28,189 |
| 10. Review stack sampling data for accuracy and completeness. | 8 | 1 | 8 | 138 | 1,104 | 55 | 110 | 1,270 |
| 11. Submit coal sampling data. | 1 | 4 | 4 | 766 | 3,064 | 153 | 306 | 3,524 |
| 12. Submit stack sampling data. | 1 | 1 | 1 | 138 | 138 | 7 | 14 | 159 |
| TOTAL | | | 111.5 | | 39,517 | 1,976 | 3,952 | 45,445 |

2 Management hours are assumed to be 5 percent of technical hours; clerical hours are assumed to be 10 percent of technical hours.
3 Assume that 10 percent need to be done twice.
4 Each facility doing stack sampling will be required to acquire and analyze one additional sample for each run of the stack testing period.
5 Assume three contract verification samples per week (average based on two 325 MWe units per site).

TABLE 2. ELECTRIC UTILITY STEAM GENERATING ICR RESPONDENT BURDEN COST ESTIMATE - TOTAL

| **Collection activities** | **Cost** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical, at $30.16[6] | Management, at $34.39[7] | Clerical, at $16.09[8] | Total |
| 1. Read instructions. | 0.5 | 1 | 0.5 | 1,100 | $16,588 | $946 | $885 | $18,419 |
| 2. Complete and submit Part I. | 0.5 | 1 | 0.5 | 1,100 | $16,588 | $946 | $885 | $18,419 |
| 3. Secure emission test contractor/review proposal. | 40 | 1 | 40 | 152 | $183,373 | $10,455 | $9,783 | $203,610 |
| 4. Coal sampling with stack testing.[9] | 0.5 | 3 | 1.5 | 138 | $6,243 | $356 | $333 | $6,932 |
| 5. Conduct coal analyses. | 0 | 156 | 0 | 766 | $11,949,600[10] | $0 | $0 | $11,949,600 |
| 6. Coal analyses with stack sampling. | 0 | 3 | 0 | 138 | $41,400 | $0 | $0 | $41,400 |
| 7. Conduct stack testing. | 0 | 1 | 0 | 138 | $6,900,000[11] | $0 | $0 | $6,900,000 |
| 8. Supervise stack testing. | 24 | 1 | 24 | 138 | $99,890 | $5,695 | $5,329 | $110,914 |
| 9. Process/compile/review coal sampling data for accuracy and completeness. | 8 | 4 | 32 | 766 | $739,282 | $42,148 | $39,440 | $820,870 |
| 10. Review emission stack data for accuracy and completeness. | 8 | 1 | 8 | 138 | $33,297 | $1,898 | $1,776 | $36,971 |
| 11. Submit coal sampling data. | 1 | 4 | 4 | 766 | $92,410 | $5,269 | $4,930 | $102,609 |
| 12. Submit stack sampling data. | 1 | 1 | 1 | 138 | $4,162 | $237 | $222 | $4,621 |
| TOTAL | | | 111.5 | | | | | $20,214,365 |

TABLE 3. ELECTRIC UTILITY STEAM GENERATING ICR EPA BURDEN HOUR ESTIMATE

6 From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 16, Special industries (public utilities); http://stats.bls.gov/news.release.ecec.t16.htm

7 From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 2, Civilian workers by occupational and industry group; http://stats.bls.gov/news.release/ecec.t02.htm

8 From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 2, Civilian workers by occupational and industry group

9 Each facility doing stack sampling will be required to acquire and analyze one additional sample for each run of the stack testing period.

10 Coal analyses are assumed to be contracted at a flat rate of $100 per sample for mercury and chlorine.

11 Emission testing is assumed to be contracted at a flat rate of $50,000 per sampling event (three sample runs per event).

| Collection activities | Burden hours[12] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical hours | Management hours | Clerical hours | Total |
| 1. Develop questionnaire. | 80 | 1 | 80 | 1 | 80 | 4 | 8 | 92 |
| 2. Review and analyze Part I responses. | 1 | 1 | 1 | 1,100 | 1,100 | 55 | 110 | 1,265 |
| 3. Determine sites to be emission tested. | 8 | 1 | 8 | 1 | 8 | 0 | 1 | 9 |
| 4. Develop generic QAPP. | 40 | 1 | 40 | 1 | 40 | 2 | 4 | 46 |
| 5. Review and comment on emission sampling test plans. | 4 | 1 | 4 | 152[13] | 608 | 30 | 61 | 699 |
| 6. Answer respondent questions. | 0.25 | 1 | 0.25 | 110[14] | 28 | 1 | 3 | 32 |
| 7. Audit stack tests. | 40 | 1 | 40 | 5 | 200 | 10 | 20 | 230 |
| 8. Review coal analysis data for accuracy and completeness. | 8 | 1 | 8 | 1,100 | 8,800 | 440 | 880 | 10,120 |
| 9. Review stack data for accuracy and completeness. | 16 | 1 | 16 | 138 | 2,208 | 110 | 221 | 2,539 |
| 10. Analyze coal sampling data. | 12 | 4 | 48 | 1,100 | 52,800 | 2,640 | 5,280 | 60,720 |
| 11. Analyze stack sampling data. | 40 | 1 | 40 | 138 | 5,520 | 276 | 552 | 6,348 |
| 12. Analyze requests for confidentiality. | 1 | 1 | 1 | 110[15] | 110 | 6 | 11 | 127 |
| TOTAL | | | 286.25 | | 71,502 | 3,575 | 7,150 | 82,227 |

[12] Management hours are assumed to be 5 percent of technical hours; clerical hours are assumed to be 10 percent of technical hours.
[13] Assume that 10 percent need to be done twice.
[14] 10 percent of respondents are assumed to have one question.
[15] 10 percent of respondents are assumed to claim information to be confidential.

TABLE 4. ELECTRIC UTILITY STEAM GENERATING ICR EPA BURDEN COST ESTIMATE

| **Collection activities** | **Cost**[16] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical, at $25.20 | Management, at $41.66 | Clerical, at $14.21 | Total |
| 1. Develop questionnaire. | 80 | 1 | 80 | 1 | $2,016 | $167 | $114 | $2,296 |
| 2. Review and analyze Part I responses. | 1 | 1 | 1 | 1,100 | $27,720 | $2,291 | $1,563 | $31,574 |
| 3. Determine sites to be emission tested. | 8 | 1 | 8 | 1 | $202 | $17 | $11 | $230 |
| 4. Develop generic QAPP. | 40 | 1 | 40 | 1 | $1,008 | $83 | $57 | $1,148 |
| 5. Review and comment on emission sampling test plans. | 4 | 1 | 4 | 152 | $15,322 | $1,266 | $864 | $17,452 |
| 6. Answer respondent questions. | 0.25 | 1 | 0.25 | 110 | $693 | $57 | $39 | $789 |
| 7. Audit stack tests. | 40 | 1 | 40 | 5 | $10,040[17] | $417 | $284 | $10,741 |
| 8. Review coal analysis data for accuracy and completeness. | 8 | 1 | 8 | 1,100 | $221,760 | $18,330 | $12,505 | $252,595 |
| 9. Review stack data for accuracy and completeness. | 16 | 1 | 16 | 138 | $55,642 | $4,599 | $3,138 | $63,378 |
| 10. Analyze coal sampling data. | 12 | 4 | 48 | 1,100 | $1,330,560 | $109,982 | $75,029 | $1,515,571 |
| 11. Analyze stack sampling data. | 40 | 1 | 40 | 138 | $139,104 | $11,498 | $7,844 | $158,446 |
| 12. Analyze requests for confidentiality. | 1 | 1 | 1 | 110 | $2,772 | $229 | $156 | $3,157 |
| TOTAL | | | 286.25 | | | | | $2,057,379 |

[16] Technical assumed at GS-12, Step 5; Management assumed at GS-15, Step 5; Clerical assumed at GS-7, Step 5.

[17] Includes $1,000 per audit for other direct costs.

TABLE 5. ELECTRIC UTILITY STEAM GENERATING ICR RESPONDENT BURDEN HOUR ESTIMATE - MERCURY CONTENT AND COAL USE DATA COMPONENT

| Collection activities | Burden hours[18] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical hours | Management hours | Clerical hours | Total |
| 1. Read instructions. | 0 | 1 | 0 | 766 | 0 | 0 | 0 | 0 |
| 2. Conduct coal analyses. | 0 | 156 | 0 | 766 | 0 | 0 | 0 | 0 |
| 3. Process/compile/review coal sampling data for accuracy and completeness. | 8 | 4 | 32 | 766 | 24,512 | 1,226 | 2,451 | 28,189 |
| 4. Submit coal sampling data. | 1 | 4 | 4 | 766 | 3,064 | 153 | 306 | 3,524 |
| TOTAL | | | 36 | | 27,576 | 1,379 | 2,758 | 31,712 |

[18] Management hours are assumed to be 5 percent of technical hours; clerical hours are assumed to be 10 percent of technical hours.

TABLE 6. ELECTRIC UTILITY STEAM GENERATING ICR RESPONDENT BURDEN COST ESTIMATE - MERCURY CONTENT AND COAL USE DATA COMPONENT

| **Collection activities** | **Cost** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical, at $30.16[19] | Management, at $34.39[20] | Clerical, at $16.09[21] | Total |
| 1. Read instructions. | 0 | 1 | 0 | 766 | $0 | $0 | $0 | $0 |
| 2. Conduct coal analyses. | 0 | 156 | 0 | 766 | $11,949,600[22] | $0 | $0 | $11,949,600 |
| 3. Process/compile/review coal sampling data for accuracy and completeness. | 8 | 4 | 32 | 766 | $739,282 | $42,148 | $39,440 | $820,870 |
| 4. Submit coal sampling data. | 1 | 4 | 4 | 766 | $92,410 | $5,269 | $4,930 | $102,609 |
| TOTAL | | | 36 | | | | | $12,873,079 |

[19] From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 16, Special Industries (public utilities); http://stats.bls.gov/news.release.ecce.t16.htm

[20] From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 2, Civilian workers by occupational and industry group; http://stats.bls.gov/news.release/ecec.t02.htm

[21] From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 2, Civilian workers by occupational and industry group

[22] Coal analyses are assumed to be contracted at a flat rate of $100 per sample for mercury and chlorine.

TABLE 7. ELECTRIC UTILITY STEAM GENERATING ICR RESPONDENT BURDEN HOUR ESTIMATE - STACK TESTING AND COAL SAMPLING COMPONENT

| **Collection activities** | **Burden hours**[23] | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical hours | Management hours | Clerical hours | Total |
| 1. Read instructions. | 0 | 1 | 0 | 138 | 0 | 0 | 0 | 0 |
| 2. Secure stack test contractor/review proposal. | 40 | 1 | 40 | 152[24] | 6,080 | 304 | 608 | 6,992 |
| 3. Conduct coal sampling. | 0.5 | 3 | 1.5 | 138 | 207 | 10 | 21 | 238 |
| 4. Conduct coal analyses. | 0 | 3 | 0 | 138 | 0 | 0 | 0 | 0 |
| 5. Conduct stack testing. | 0 | 1 | 0 | 138 | 0 | 0 | 0 | 0 |
| 6. Supervise stack testing. | 24 | 1 | 24 | 138 | 3,312 | 166 | 331 | 3,809 |
| 7. Review stack sampling data for accuracy and completeness. | 8 | 1 | 8 | 138 | 1,104 | 55 | 110 | 1,270 |
| 8. Submit stack sampling data. | 1 | 1 | 1 | 138 | 138 | 7 | 14 | 159 |
| TOTAL | | | 74.5 | | 10,841 | 542 | 1,084 | 12,467 |

[23] Management hours are assumed to be 5 percent of technical hours; clerical hours are assumed to be 10 percent of technical hours.
[24] Assume that 10 percent need to be done twice.

TABLE 8. ELECTRIC UTILITY STEAM GENERATING ICR RESPONDENT BURDEN COST ESTIMATE - STACK TESTING AND COAL SAMPLING COMPONENT

| **Collection activities** | **Cost** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Technical hours per occurrence | Occurrences per respondent | Technical hours per respondent | Respondents | Technical, at \$30.16[25] | Management, at \$34.39[26] | Clerical, at \$16.09[27] | |
| 1. Read instructions. | 0 | 1 | 0 | 138 | \$0 | \$0 | \$0 | \$0 |
| 2. Secure stack test contractor/review proposal. | 40 | 1 | 40 | 152 | \$183,373 | \$10,455 | \$9,783 | \$203,610 |
| 3. Conduct coal sampling. | 0.5 | 3 | 1.5 | 138 | \$6,243 | \$356 | \$333 | \$6,932 |
| 4. Conduct coal analyses. | 0 | 3 | 0 | 138 | \$41,400[28] | \$0 | \$0 | \$41,400 |
| 5. Conduct stack testing. | 0 | 1 | 0 | 138 | \$6,900,000[29] | \$0 | \$0 | \$6,900,000 |
| 6. Supervise stack testing. | 24 | 1 | 24 | 138 | \$99,890 | \$5,695 | \$5,329 | \$110,914 |
| 7. Review stack sampling data for accuracy and completeness. | 8 | 1 | 8 | 138 | \$33,297 | \$1,898 | \$1,776 | \$36,971 |
| 8. Submit stack sampling data. | 1 | 1 | 1 | 138 | \$4,162 | \$237 | \$222 | \$4,621 |
| TOTAL | | | 74.5 | | | | | \$7,304,449 |

25 From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 16, Special Industries (public utilities); http://stats.bls.gov/news.release.ecce.t16.htm

26 From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 2, Civilian workers by occupational and industry group; http://stats.bls.gov/news.release/ecec.t02.htm.

27 From Bureau of Labor Statistics, March 1998 Employment Cost Trends, Table 2, Civilian workers by occupational and industry group.

28 Coal analyses are assumed to be contracted at a flat rate of \$100 per sample for mercury and chlorine.

29 Emission testing is assumed to be contracted at a flat rate of \$50,000 per sampling event (three sample runs per event).

TABLE 9a. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH DRY SCRUBBERS USING BITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Cherokee | CO | 4 | Dry | Bituminous |
| East Bend | KY | 2 | Dry | Bituminous |
| Seward | PA | 5 | Dry | Bituminous |
| Whitewater Valley | IN | 2 | Dry | Bituminous |
| Wyodak | WY | 1 | Dry | Bituminous |

TABLE 9b. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH DRY SCRUBBERS USING LIGNITE COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Antelope Valley | ND | 1 | Dry | Lignite |
| Antelope Valley | ND | 2 | Dry | Lignite |
| Coyote | ND | 1 | Dry | Lignite |
| Stanton | ND | 10 | Dry | Lignite |

TABLE 9c. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH DRY SCRUBBERS USING SUBBITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Craig | CO | 3 | Dry | Subbituminous |
| GRDA | OK | 2 | Dry | Subbituminous |
| Healy | AK | 1 | Dry | Subbituminous |
| Healy | AK | 2 | Dry | Subbituminous |
| Holcomb | KS | 1 | Dry | Subbituminous |
| Holcomb | KS | 2 | Dry | Subbituminous |
| Holcomb | KS | 3 | Dry | Subbituminous |
| North Valmy | NV | 2 | Dry | Subbituminous |
| Rawhide | CO | 1 | Dry | Subbituminous |
| Riverside | MN | 7 | Dry | Subbituminous |
| Sherburne County | MN | 3 | Dry | Subbituminous |
| Shiras | MI | 3 | Dry | Subbituminous |
| Springerville | AZ | 1 | Dry | Subbituminous |
| Springerville | AZ | 2 | Dry | Subbituminous |

TABLE 9d. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH NO SCRUBBER USING BITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Acme | OH | 2 | None | Bituminous |
| Albright | WV | 1 | None | Bituminous |
| Albright | WV | 2 | None | Bituminous |
| Albright | WV | 3 | None | Bituminous |
| Allen | NC | 1 | None | Bituminous |
| Allen | NC | 2 | None | Bituminous |
| Allen | NC | 3 | None | Bituminous |
| Allen | NC | 4 | None | Bituminous |
| Allen | NC | 5 | None | Bituminous |
| AM Williams | SC | 1 | None | Bituminous |
| Amos | WV | 1 | None | Bituminous |
| Amos | WV | 2 | None | Bituminous |
| Amos | WV | 3 | None | Bituminous |
| Arapahoe | CO | 1 | None | Bituminous |
| Arapahoe | CO | 2 | None | Bituminous |
| Arapahoe | CO | 3 | None | Bituminous |
| Arapahoe | CO | 4 | None | Bituminous |
| Arkwright | GA | 1 | None | Bituminous |
| Arkwright | GA | 2 | None | Bituminous |
| Arkwright | GA | 3 | None | Bituminous |
| Arkwright | GA | 4 | None | Bituminous |
| Armstrong | PA | 1 | None | Bituminous |
| Armstrong | PA | 2 | None | Bituminous |
| Asheville | NC | 1 | None | Bituminous |
| Asheville | NC | 2 | None | Bituminous |
| Ashtabula | OH | 5 | None | Bituminous |
| Avon Lake | OH | 6 | None | Bituminous |
| Avon Lake | OH | 7 | None | Bituminous |
| Avon Lake | OH | 9 | None | Bituminous |
| Baldwin | IL | 1 | None | Bituminous |
| Baldwin | IL | 2 | None | Bituminous |
| Baldwin | IL | 3 | None | Bituminous |
| Barry | AL | 1 | None | Bituminous |
| Barry | AL | 2 | None | Bituminous |
| Barry | AL | 3 | None | Bituminous |
| Barry | AL | 4 | None | Bituminous |
| Barry | AL | 5 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Bay Shore | OH | 1 | None | Bituminous |
| Bay Shore | OH | 2 | None | Bituminous |
| Bay Shore | OH | 3 | None | Bituminous |
| Bay Shore | OH | 4 | None | Bituminous |
| BeeBee | NY | 12 | None | Bituminous |
| Belews Creek | NC | 1 | None | Bituminous |
| Belews Creek | NC | 2 | None | Bituminous |
| Big Bend | FL | 1 | None | Bituminous |
| Big Bend | FL | 2 | None | Bituminous |
| Big Bend | FL | 3 | None | Bituminous |
| Big Bend | FL | 4 | None | Bituminous |
| Big Sandy | KY | 1 | None | Bituminous |
| Big Sandy | KY | 2 | None | Bituminous |
| BL England | NJ | 1 | None | Bituminous |
| Blount Street | WI | 6 | None | Bituminous |
| Blount Street | WI | 7 | None | Bituminous |
| Blue Valley | MO | 3 | None | Bituminous |
| Bonanza | UT | 1 | None | Bituminous |
| Bowen | GA | 1 | None | Bituminous |
| Bowen | GA | 2 | None | Bituminous |
| Bowen | GA | 3 | None | Bituminous |
| Bowen | GA | 4 | None | Bituminous |
| Brandon Shores | MD | 1 | None | Bituminous |
| Brandon Shores | MD | 2 | None | Bituminous |
| Brayton Point | MA | 1 | None | Bituminous |
| Brayton Point | MA | 2 | None | Bituminous |
| Brayton Point | MA | 3 | None | Bituminous |
| Bremo Bluff | VA | 3 | None | Bituminous |
| Bremo Bluff | VA | 4 | None | Bituminous |
| Bridgeport Harbor | CT | 3 | None | Bituminous |
| Brunner Island | PA | 1 | None | Bituminous |
| Brunner Island | PA | 2 | None | Bituminous |
| Brunner Island | PA | 3 | None | Bituminous |
| Buck | NC | 3 | None | Bituminous |
| Buck | NC | 4 | None | Bituminous |
| Buck | NC | 5 | None | Bituminous |
| Buck | NC | 6 | None | Bituminous |
| Bull Run | TN | 1 | None | Bituminous |
| Cameo | CO | 2 | None | Bituminous |
| Canadys | SC | 1 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Canadys | SC | 2 | None | Bituminous |
| Canadys | SC | 3 | None | Bituminous |
| Cape Fear | NC | 5 | None | Bituminous |
| Cape Fear | NC | 6 | None | Bituminous |
| Carbon | UT | 1 | None | Bituminous |
| Carbon | UT | 2 | None | Bituminous |
| Cardinal | OH | 1 | None | Bituminous |
| Cardinal | OH | 2 | None | Bituminous |
| Cardinal | OH | 3 | None | Bituminous |
| Carlson | NY | 5 | None | Bituminous |
| Carlson | NY | 6 | None | Bituminous |
| Cayuga | IN | 1 | None | Bituminous |
| Cayuga | IN | 2 | None | Bituminous |
| Chalk Point | MD | 1 | None | Bituminous |
| Chalk Point | MD | 2 | None | Bituminous |
| Chamois | MO | 2 | None | Bituminous |
| Charles R Lowman | AL | 1 | None | Bituminous |
| Cherokee | CO | 1 | None | Bituminous |
| Chesapeake | VA | 1 | None | Bituminous |
| Chesapeake | VA | 2 | None | Bituminous |
| Chesapeake | VA | 3 | None | Bituminous |
| Chesapeake | VA | 4 | None | Bituminous |
| Chesterfield | VA | 3 | None | Bituminous |
| Chesterfield | VA | 4 | None | Bituminous |
| Chesterfield | VA | 5 | None | Bituminous |
| Chesterfield | VA | 6 | None | Bituminous |
| Cheswick | PA | 1 | None | Bituminous |
| Cliffside | NC | 1 | None | Bituminous |
| Cliffside | NC | 2 | None | Bituminous |
| Cliffside | NC | 3 | None | Bituminous |
| Cliffside | NC | 4 | None | Bituminous |
| Cliffside | NC | 5 | None | Bituminous |
| Clifty Creek | IN | 1 | None | Bituminous |
| Clifty Creek | IN | 2 | None | Bituminous |
| Clifty Creek | IN | 3 | None | Bituminous |
| Clifty Creek | IN | 4 | None | Bituminous |
| Clifty Creek | IN | 5 | None | Bituminous |
| Clifty Creek | IN | 6 | None | Bituminous |
| Clinch River | VA | 1 | None | Bituminous |
| Clinch River | VA | 2 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Clinch River | VA | 3 | None | Bituminous |
| Coffeen | IL | 1 | None | Bituminous |
| Coffeen | IL | 2 | None | Bituminous |
| Colbert | AL | 1 | None | Bituminous |
| Colbert | AL | 2 | None | Bituminous |
| Colbert | AL | 3 | None | Bituminous |
| Colbert | AL | 4 | None | Bituminous |
| Colbert | AL | 5 | None | Bituminous |
| Coleman | KY | 1 | None | Bituminous |
| Coleman | KY | 2 | None | Bituminous |
| Coleman | KY | 3 | None | Bituminous |
| Conesville | OH | 1 | None | Bituminous |
| Conesville | OH | 2 | None | Bituminous |
| Conesville | OH | 3 | None | Bituminous |
| Conesville | OH | 4 | None | Bituminous |
| CP Crane | MD | 1 | None | Bituminous |
| CP Crane | MD | 2 | None | Bituminous |
| CR Huntley | NY | 63 | None | Bituminous |
| CR Huntley | NY | 64 | None | Bituminous |
| CR Huntley | NY | 65 | None | Bituminous |
| CR Huntley | NY | 66 | None | Bituminous |
| CR Huntley | NY | 67 | None | Bituminous |
| CR Huntley | NY | 68 | None | Bituminous |
| Crist | FL | 4 | None | Bituminous |
| Crist | FL | 5 | None | Bituminous |
| Crist | FL | 6 | None | Bituminous |
| Crist | FL | 7 | None | Bituminous |
| Crystal River | FL | 1 | None | Bituminous |
| Crystal River | FL | 2 | None | Bituminous |
| Crystal River | FL | 4 | None | Bituminous |
| Crystal River | FL | 5 | None | Bituminous |
| Dale | KY | 3 | None | Bituminous |
| Dale | KY | 4 | None | Bituminous |
| Dallman | IL | 1 | None | Bituminous |
| Dallman | IL | 2 | None | Bituminous |
| Dan River | NC | 1 | None | Bituminous |
| Dan River | NC | 2 | None | Bituminous |
| Dan River | NC | 3 | None | Bituminous |
| Danskammer Point | NY | 3 | None | Bituminous |
| Danskammer Point | NY | 4 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| DE Karn | MI | 1 | None | Bituminous |
| DE Karn | MI | 2 | None | Bituminous |
| Deepwater | NJ | 6 | None | Bituminous |
| Deerhaven | FL | 2 | None | Bituminous |
| Dickerson | MD | 1 | None | Bituminous |
| Dickerson | MD | 2 | None | Bituminous |
| Dickerson | MD | 3 | None | Bituminous |
| Dubuque | IA | 3 | None | Bituminous |
| Dubuque | IA | 4 | None | Bituminous |
| Dunkirk | NY | 1 | None | Bituminous |
| Dunkirk | NY | 2 | None | Bituminous |
| Dunkirk | NY | 3 | None | Bituminous |
| Dunkirk | NY | 4 | None | Bituminous |
| Earl F. Wisdom | IA | 1 | None | Bituminous |
| Eastlake | OH | 1 | None | Bituminous |
| Eastlake | OH | 2 | None | Bituminous |
| Eastlake | OH | 3 | None | Bituminous |
| Eastlake | OH | 4 | None | Bituminous |
| Eastlake | OH | 5 | None | Bituminous |
| Eckert | MI | 1 | None | Bituminous |
| Eckert | MI | 2 | None | Bituminous |
| Eckert | MI | 3 | None | Bituminous |
| Eckert | MI | 4 | None | Bituminous |
| Eckert | MI | 5 | None | Bituminous |
| Eckert | MI | 6 | None | Bituminous |
| ED Edwards | IL | 1 | None | Bituminous |
| ED Edwards | IL | 2 | None | Bituminous |
| ED Edwards | IL | 3 | None | Bituminous |
| Edge Moor | DE | 3 | None | Bituminous |
| Edge Moor | DE | 4 | None | Bituminous |
| Edgewater | OH | 4 | None | Bituminous |
| Edwardsport | IN | 7 | None | Bituminous |
| Edwardsport | IN | 8 | None | Bituminous |
| Elmer Smith | KY | 2 | None | Bituminous |
| Erickson | MI | 1 | None | Bituminous |
| EW Brown | KY | 1 | None | Bituminous |
| EW Brown | KY | 2 | None | Bituminous |
| EW Brown | KY | 3 | None | Bituminous |
| EW Stout | IN | 5 | None | Bituminous |
| EW Stout | IN | 6 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| EW Stout | IN | 7 | None | Bituminous |
| FB Culley | IN | 1 | None | Bituminous |
| FE Fair | IA | 2 | None | Bituminous |
| Fort Martin | WV | 1 | None | Bituminous |
| Fort Martin | WV | 2 | None | Bituminous |
| Fox Lake | MN | 3 | None | Bituminous |
| Gadsby | UT | 2 | None | Bituminous |
| Gadsby | UT | 3 | None | Bituminous |
| Gadsden New | AL | 1 | None | Bituminous |
| Gadsden New | AL | 2 | None | Bituminous |
| Gallagher | IN | 1 | None | Bituminous |
| Gallagher | IN | 2 | None | Bituminous |
| Gallagher | IN | 3 | None | Bituminous |
| Gallagher | IN | 4 | None | Bituminous |
| Gallatin | TN | 1 | None | Bituminous |
| Gallatin | TN | 2 | None | Bituminous |
| Gallatin | TN | 3 | None | Bituminous |
| Gallatin | TN | 4 | None | Bituminous |
| Gannon | FL | 1 | None | Bituminous |
| Gannon | FL | 2 | None | Bituminous |
| Gannon | FL | 3 | None | Bituminous |
| Gannon | FL | 4 | None | Bituminous |
| Gannon | FL | 5 | None | Bituminous |
| Gannon | FL | 6 | None | Bituminous |
| Gaston | AL | 1 | None | Bituminous |
| Gaston | AL | 2 | None | Bituminous |
| Gaston | AL | 3 | None | Bituminous |
| Gaston | AL | 4 | None | Bituminous |
| Gaston | AL | 5 | None | Bituminous |
| Genoa | WI | 3 | None | Bituminous |
| Ghent | KY | 2 | None | Bituminous |
| Ghent | KY | 3 | None | Bituminous |
| Ghent | KY | 4 | None | Bituminous |
| Gibson | IN | 1 | None | Bituminous |
| Gibson | IN | 2 | None | Bituminous |
| Gibson | IN | 3 | None | Bituminous |
| Glen Lyn | VA | 5 | None | Bituminous |
| Glen Lyn | VA | 6 | None | Bituminous |
| Gorgas Two | AL | 6 | None | Bituminous |
| Gorgas Two | AL | 7 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Gorgas Two | AL | 8 | None | Bituminous |
| Gorgas Two | AL | 9 | None | Bituminous |
| Gorgas Two | AL | 10 | None | Bituminous |
| Goudey | NY | 7 | None | Bituminous |
| Goudey | NY | 8 | None | Bituminous |
| Grainger | SC | 1 | None | Bituminous |
| Grainger | SC | 2 | None | Bituminous |
| Grand Tower | IL | 3 | None | Bituminous |
| Grand Tower | IL | 4 | None | Bituminous |
| Green River | KY | 3 | None | Bituminous |
| Green River | KY | 4 | None | Bituminous |
| Greene County | AL | 1 | None | Bituminous |
| Greene County | AL | 2 | None | Bituminous |
| Greenidge | NY | 3 | None | Bituminous |
| Greenidge | NY | 4 | None | Bituminous |
| HA Wagner | MD | 2 | None | Bituminous |
| HA Wagner | MD | 3 | None | Bituminous |
| Hammond | GA | 1 | None | Bituminous |
| Hammond | GA | 2 | None | Bituminous |
| Hammond | GA | 3 | None | Bituminous |
| Hammond | GA | 4 | None | Bituminous |
| Harbor Beach | MI | 1 | None | Bituminous |
| Harllee Branch | GA | 1 | None | Bituminous |
| Harllee Branch | GA | 2 | None | Bituminous |
| Harllee Branch | GA | 3 | None | Bituminous |
| Harllee Branch | GA | 4 | None | Bituminous |
| Hatfields Ferry | PA | 1 | None | Bituminous |
| Hatfields Ferry | PA | 2 | None | Bituminous |
| Hatfields Ferry | PA | 3 | None | Bituminous |
| Havana | IL | 6 | None | Bituminous |
| Hayden | CO | 1 | None | Bituminous |
| Hayden | CO | 2 | None | Bituminous |
| Henderson One | KY | 6 | None | Bituminous |
| Henderson Two | KY | 1 | None | Bituminous |
| Henderson Two | KY | 2 | None | Bituminous |
| Hennepin | IL | 1 | None | Bituminous |
| Hennepin | IL | 2 | None | Bituminous |
| Hickling | NY | 1 | None | Bituminous |
| Hickling | NY | 2 | None | Bituminous |
| High Bridge | MN | 4 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| HL Spurlock | KY | 1 | None | Bituminous |
| Holtwood | PA | 17 | None | Bituminous |
| Hower City | PA | 3 | None | Bituminous |
| Hower City | PA | 2 | None | Bituminous |
| Hower City | PA | 1 | None | Bituminous |
| HT Pritchard | IN | 3 | None | Bituminous |
| HT Pritchard | IN | 4 | None | Bituminous |
| HT Pritchard | IN | 5 | None | Bituminous |
| HT Pritchard | IN | 6 | None | Bituminous |
| Hudson | NJ | 2 | None | Bituminous |
| JR Whiting | MI | 1 | None | Bituminous |
| JR Whiting | MI | 2 | None | Bituminous |
| JR Whiting | MI | 3 | None | Bituminous |
| JS Cooper | KY | 1 | None | Bituminous |
| JS Cooper | KY | 2 | None | Bituminous |
| Hunlock | PA | 3 | None | Bituminous |
| Huntington | UT | 2 | None | Bituminous |
| Hutchings | OH | 1 | None | Bituminous |
| Hutchings | OH | 2 | None | Bituminous |
| Hutchings | OH | 3 | None | Bituminous |
| Hutchings | OH | 4 | None | Bituminous |
| Hutchings | OH | 5 | None | Bituminous |
| Hutchings | OH | 6 | None | Bituminous |
| Hutsonville | IL | 3 | None | Bituminous |
| Hutsonville | IL | 4 | None | Bituminous |
| Indian River | DE | 1 | None | Bituminous |
| Indian River | DE | 2 | None | Bituminous |
| Indian River | DE | 3 | None | Bituminous |
| Indian River | DE | 4 | None | Bituminous |
| Jack Watson | MS | 4 | None | Bituminous |
| Jack Watson | MS | 5 | None | Bituminous |
| James DeYoung | MI | 5 | None | Bituminous |
| James River | MO | 3 | None | Bituminous |
| James River | MO | 4 | None | Bituminous |
| James River | MO | 5 | None | Bituminous |
| JC Weadock | MI | 7 | None | Bituminous |
| JC Weadock | MI | 8 | None | Bituminous |
| Kammer | WV | 1 | None | Bituminous |
| Kammer | WV | 2 | None | Bituminous |
| Kammer | WV | 3 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Kanawha River | WV | 1 | None | Bituminous |
| Kanawha River | WV | 2 | None | Bituminous |
| Jefferies | SC | 3 | None | Bituminous |
| Jefferies | SC | 4 | None | Bituminous |
| Jennison | NY | 1 | None | Bituminous |
| Jennison | NY | 2 | None | Bituminous |
| JH Campbell | MI | 1 | None | Bituminous |
| JH Campbell | MI | 2 | None | Bituminous |
| JH Campbell | MI | 3 | None | Bituminous |
| JM Stuart | OH | 1 | None | Bituminous |
| JM Stuart | OH | 2 | None | Bituminous |
| JM Stuart | OH | 3 | None | Bituminous |
| JM Stuart | OH | 4 | None | Bituminous |
| John Sevier | TN | 1 | None | Bituminous |
| John Sevier | TN | 2 | None | Bituminous |
| John Sevier | TN | 3 | None | Bituminous |
| John Sevier | TN | 4 | None | Bituminous |
| Johnsonville | TN | 1 | None | Bituminous |
| Johnsonville | TN | 2 | None | Bituminous |
| Johnsonville | TN | 3 | None | Bituminous |
| Johnsonville | TN | 4 | None | Bituminous |
| Johnsonville | TN | 5 | None | Bituminous |
| Johnsonville | TN | 6 | None | Bituminous |
| Johnsonville | TN | 7 | None | Bituminous |
| Johnsonville | TN | 8 | None | Bituminous |
| Johnsonville | TN | 9 | None | Bituminous |
| Johnsonville | TN | 10 | None | Bituminous |
| Keystone | PA | 1 | None | Bituminous |
| Keystone | PA | 2 | None | Bituminous |
| Killen | OH | 2 | None | Bituminous |
| Kincaid | IL | 1 | None | Bituminous |
| Kincaid | IL | 2 | None | Bituminous |
| Kingston | TN | 1 | None | Bituminous |
| Kingston | TN | 2 | None | Bituminous |
| Kingston | TN | 3 | None | Bituminous |
| Kingston | TN | 4 | None | Bituminous |
| Kingston | TN | 5 | None | Bituminous |
| Kingston | TN | 6 | None | Bituminous |
| Kingston | TN | 7 | None | Bituminous |
| Kingston | TN | 8 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Kingston | TN | 9 | None | Bituminous |
| Kraft | GA | 1 | None | Bituminous |
| Kraft | GA | 2 | None | Bituminous |
| Kraft | GA | 3 | None | Bituminous |
| Kyger Creek | OH | 1 | None | Bituminous |
| Kyger Creek | OH | 2 | None | Bituminous |
| Kyger Creek | OH | 3 | None | Bituminous |
| Kyger Creek | OH | 4 | None | Bituminous |
| Kyger Creek | OH | 5 | None | Bituminous |
| Lake Road | MO | 4 | None | Bituminous |
| Lake Shore | OH | 18 | None | Bituminous |
| Lakeside | IL | 6 | None | Bituminous |
| Lakeside | IL | 7 | None | Bituminous |
| Lansing Smith | FL | 1 | None | Bituminous |
| Lansing Smith | FL | 2 | None | Bituminous |
| Lee | NC | 1 | None | Bituminous |
| Lee | NC | 2 | None | Bituminous |
| Lee | NC | 3 | None | Bituminous |
| Lee | SC | 1 | None | Bituminous |
| Lee | SC | 2 | None | Bituminous |
| Lee | SC | 3 | None | Bituminous |
| Lovett | NY | 4 | None | Bituminous |
| Lovett | NY | 5 | None | Bituminous |
| Manitowoc | WI | 6 | None | Bituminous |
| Marion | IL | 1 | None | Bituminous |
| Marion | IL | 2 | None | Bituminous |
| Marion | IL | 3 | None | Bituminous |
| Marshall | NC | 1 | None | Bituminous |
| Marshall | NC | 2 | None | Bituminous |
| Marshall | NC | 3 | None | Bituminous |
| Marshall | NC | 4 | None | Bituminous |
| Martins Creek | PA | 1 | None | Bituminous |
| Martins Creek | PA | 2 | None | Bituminous |
| Marysville | MI | 6 | None | Bituminous |
| Marysville | MI | 7 | None | Bituminous |
| Marysville | MI | 8 | None | Bituminous |
| Mayo | NC | 1 | None | Bituminous |
| McDonough | GA | 1 | None | Bituminous |
| McDonough | GA | 2 | None | Bituminous |
| McIntosh | GA | 1 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| McMeekin | SC | 1 | None | Bituminous |
| McMeekin | SC | 2 | None | Bituminous |
| Meramec | MO | 1 | None | Bituminous |
| Meramec | MO | 2 | None | Bituminous |
| Meramec | MO | 3 | None | Bituminous |
| Meramec | MO | 4 | None | Bituminous |
| Mercer | NJ | 1 | None | Bituminous |
| Mercer | NJ | 2 | None | Bituminous |
| Meredosia | IL | 1 | None | Bituminous |
| Meredosia | IL | 2 | None | Bituminous |
| Meredosia | IL | 3 | None | Bituminous |
| Merrimack | NH | 1 | None | Bituminous |
| Merrimack | NH | 2 | None | Bituminous |
| Miami Fort | OH | 5 | None | Bituminous |
| Miami Fort | OH | 6 | None | Bituminous |
| Miami Fort | OH | 7 | None | Bituminous |
| Miami Fort | OH | 8 | None | Bituminous |
| Miller | AL | 1 | None | Bituminous |
| Miller | AL | 2 | None | Bituminous |
| Miller | AL | 3 | None | Bituminous |
| Miller | AL | 4 | None | Bituminous |
| Minnesota Valley | MN | 3 | None | Bituminous |
| Mitchell | GA | 3 | None | Bituminous |
| Mitchell | WV | 1 | None | Bituminous |
| Mitchell | WV | 2 | None | Bituminous |
| ML Kapp | IA | 2 | None | Bituminous |
| Montour | PA | 1 | None | Bituminous |
| Montour | PA | 2 | None | Bituminous |
| Morgantown | MD | 1 | None | Bituminous |
| Morgantown | MD | 2 | None | Bituminous |
| Mount Storm | WV | 1 | None | Bituminous |
| Mount Storm | WV | 2 | None | Bituminous |
| Mount Tom | MA | 1 | None | Bituminous |
| Mountaineer | WV | 1 | None | Bituminous |
| Muskingum River | OH | 1 | None | Bituminous |
| Muskingum River | OH | 2 | None | Bituminous |
| Muskingum River | OH | 3 | None | Bituminous |
| Muskingum River | OH | 4 | None | Bituminous |
| Muskingum River | OH | 5 | None | Bituminous |
| New Castle | PA | 3 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| New Castle | PA | 4 | None | Bituminous |
| New Castle | PA | 5 | None | Bituminous |
| Newton | IL | 2 | None | Bituminous |
| Niles | OH | 2 | None | Bituminous |
| Noblesville | IN | 1 | None | Bituminous |
| Noblesville | IN | 2 | None | Bituminous |
| Northeast | MN | 1 | None | Bituminous |
| Oak Creek | WI | 5 | None | Bituminous |
| Oak Creek | WI | 6 | None | Bituminous |
| Oak Creek | WI | 7 | None | Bituminous |
| Oak Creek | WI | 8 | None | Bituminous |
| Paradise | KY | 3 | None | Bituminous |
| Philip Sporn | WV | 1 | None | Bituminous |
| Philip Sporn | WV | 2 | None | Bituminous |
| Philip Sporn | WV | 3 | None | Bituminous |
| Philip Sporn | WV | 4 | None | Bituminous |
| Philip Sporn | WV | 5 | None | Bituminous |
| Picway | OH | 5 | None | Bituminous |
| Pineville | KY | 3 | None | Bituminous |
| Port Washington | WI | 2 | None | Bituminous |
| Port Washington | WI | 3 | None | Bituminous |
| Portland | PA | 1 | None | Bituminous |
| Portland | PA | 2 | None | Bituminous |
| Possum Point | VA | 3 | None | Bituminous |
| Possum Point | VA | 4 | None | Bituminous |
| Potomac River | VA | 1 | None | Bituminous |
| Potomac River | VA | 2 | None | Bituminous |
| Potomac River | VA | 3 | None | Bituminous |
| Potomac River | VA | 4 | None | Bituminous |
| Potomac River | VA | 5 | None | Bituminous |
| Quindaro Three | KS | 1 | None | Bituminous |
| Quindaro Three | KS | 2 | None | Bituminous |
| Ratts | IN | 1 | None | Bituminous |
| Ratts | IN | 2 | None | Bituminous |
| RD Nixon | CO | 1 | None | Bituminous |
| RE Burger | OH | 1 | None | Bituminous |
| RE Burger | OH | 2 | None | Bituminous |
| RE Burger | OH | 3 | None | Bituminous |
| RE Burger | OH | 4 | None | Bituminous |
| RE Burger | OH | 5 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Reid | KY | 1 | None | Bituminous |
| RH Gorsuch | OH | 1 | None | Bituminous |
| RH Gorsuch | OH | 2 | None | Bituminous |
| River Rouge | MI | 2 | None | Bituminous |
| River Rouge | MI | 3 | None | Bituminous |
| Riverbend | NC | 4 | None | Bituminous |
| Riverbend | NC | 5 | None | Bituminous |
| Riverbend | NC | 6 | None | Bituminous |
| Riverbend | NC | 7 | None | Bituminous |
| Riverside | IA | 5 | None | Bituminous |
| Rivesville | WV | 5 | None | Bituminous |
| Rivesville | WV | 6 | None | Bituminous |
| RM Schahfer | IN | 14 | None | Bituminous |
| RM Schahfer | IN | 15 | None | Bituminous |
| Robinson | SC | 1 | None | Bituminous |
| Rock River | WI | 1 | None | Bituminous |
| Rock River | WI | 2 | None | Bituminous |
| Roxboro | NC | 1 | None | Bituminous |
| Roxboro | NC | 2 | None | Bituminous |
| Roxboro | NC | 3 | None | Bituminous |
| Roxboro | NC | 4 | None | Bituminous |
| RP Smith | MD | 3 | None | Bituminous |
| RP Smith | MD | 4 | None | Bituminous |
| Russell | NY | 1 | None | Bituminous |
| Russell | NY | 2 | None | Bituminous |
| Russell | NY | 3 | None | Bituminous |
| Russell | NY | 4 | None | Bituminous |
| Salem Harbor | MA | 1 | None | Bituminous |
| Salem Harbor | MA | 2 | None | Bituminous |
| Salem Harbor | MA | 3 | None | Bituminous |
| Schiller | NH | 4 | None | Bituminous |
| Schiller | NH | 5 | None | Bituminous |
| Schiller | NH | 6 | None | Bituminous |
| Scholz | FL | 1 | None | Bituminous |
| Scholz | FL | 2 | None | Bituminous |
| Seward | PA | 4 | None | Bituminous |
| Shawnee | KY | 1 | None | Bituminous |
| Shawnee | KY | 2 | None | Bituminous |
| Shawnee | KY | 3 | None | Bituminous |
| Shawnee | KY | 4 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Shawnee | KY | 5 | None | Bituminous |
| Shawnee | KY | 6 | None | Bituminous |
| Shawnee | KY | 7 | None | Bituminous |
| Shawnee | KY | 8 | None | Bituminous |
| Shawnee | KY | 10 | None | Bituminous |
| Shawville | PA | 1 | None | Bituminous |
| Shawville | PA | 2 | None | Bituminous |
| Shawville | PA | 3 | None | Bituminous |
| Shawville | PA | 4 | None | Bituminous |
| Silver Lake | MN | 4 | None | Bituminous |
| Sixth Street | IA | 8 | None | Bituminous |
| Somerset | MA | 6 | None | Bituminous |
| St. Clair | MI | 7 | None | Bituminous |
| Streeter | IA | 7 | None | Bituminous |
| Sunbury | PA | 4 | None | Bituminous |
| Sutherland | IA | 1 | None | Bituminous |
| Sutherland | IA | 2 | None | Bituminous |
| Sutherland | IA | 3 | None | Bituminous |
| Sutton | NC | 1 | None | Bituminous |
| Sutton | NC | 2 | None | Bituminous |
| Sutton | NC | 3 | None | Bituminous |
| Tanners Creek | IN | 1 | None | Bituminous |
| Tanners Creek | IN | 2 | None | Bituminous |
| Tanners Creek | IN | 3 | None | Bituminous |
| Tanners Creek | IN | 4 | None | Bituminous |
| TH Allen | TN | 1 | None | Bituminous |
| TH Allen | TN | 2 | None | Bituminous |
| TH Allen | TN | 3 | None | Bituminous |
| Titus | PA | 1 | None | Bituminous |
| Titus | PA | 2 | None | Bituminous |
| Titus | PA | 3 | None | Bituminous |
| Trenton Channel | MI | 9 | None | Bituminous |
| Tyrone | KY | 3 | None | Bituminous |
| Urquhart | SC | 1 | None | Bituminous |
| Urquhart | SC | 2 | None | Bituminous |
| Urquhart | SC | 3 | None | Bituminous |
| Valley | WI | 1 | None | Bituminous |
| Valley | WI | 2 | None | Bituminous |
| Vermilion | IL | 1 | None | Bituminous |
| Vermilion | IL | 2 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Wabash River | IN | 2 | None | Bituminous |
| Wabash River | IN | 3 | None | Bituminous |
| Wabash River | IN | 4 | None | Bituminous |
| Wabash River | IN | 5 | None | Bituminous |
| Wabash River | IN | 6 | None | Bituminous |
| Wansley | GA | 1 | None | Bituminous |
| Wansley | GA | 2 | None | Bituminous |
| Warren | PA | 1 | None | Bituminous |
| Warren | PA | 2 | None | Bituminous |
| Warrick | IN | 4 | None | Bituminous |
| Wateree | SC | 1 | None | Bituminous |
| Wateree | SC | 2 | None | Bituminous |
| WC Beckjord | OH | 1 | None | Bituminous |
| WC Beckjord | OH | 2 | None | Bituminous |
| WC Beckjord | OH | 3 | None | Bituminous |
| WC Beckjord | OH | 4 | None | Bituminous |
| WC Beckjord | OH | 5 | None | Bituminous |
| WC Beckjord | OH | 6 | None | Bituminous |
| Weatherspoon | NC | 1 | None | Bituminous |
| Weatherspoon | NC | 2 | None | Bituminous |
| Weatherspoon | NC | 3 | None | Bituminous |
| WH Sammis | OH | 1 | None | Bituminous |
| WH Sammis | OH | 2 | None | Bituminous |
| WH Sammis | OH | 3 | None | Bituminous |
| WH Sammis | OH | 4 | None | Bituminous |
| WH Sammis | OH | 5 | None | Bituminous |
| WH Sammis | OH | 6 | None | Bituminous |
| WH Sammis | OH | 7 | None | Bituminous |
| Whitewater Valley | IN | 1 | None | Bituminous |
| Widows Creek | AL | 1 | None | Bituminous |
| Widows Creek | AL | 2 | None | Bituminous |
| Widows Creek | AL | 3 | None | Bituminous |
| Widows Creek | AL | 4 | None | Bituminous |
| Widows Creek | AL | 5 | None | Bituminous |
| Widows Creek | AL | 6 | None | Bituminous |
| Willow Island | WV | 1 | None | Bituminous |
| Willow Island | WV | 2 | None | Bituminous |
| Winyah | SC | 1 | None | Bituminous |
| Wood River | IL | 4 | None | Bituminous |
| Wood River | IL | 5 | None | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Yates | GA | 2 | None | Bituminous |
| Yates | GA | 3 | None | Bituminous |
| Yates | GA | 4 | None | Bituminous |
| Yates | GA | 5 | None | Bituminous |
| Yates | GA | 6 | None | Bituminous |
| Yates | GA | 7 | None | Bituminous |
| Yorktown | VA | 1 | None | Bituminous |
| Yorktown | VA | 2 | None | Bituminous |

TABLE 9e. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH NO SCRUBBER USING LIGNITE COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Big Brown | TX | 1 | None | Lignite |
| Big Brown | TX | 2 | None | Lignite |
| Big Stone | SD | 1 | None | Lignite |
| Leland Olds | ND | 1 | None | Lignite |
| Leland Olds | ND | 2 | None | Lignite |
| Lewis & Clark | MT | 1 | None | Lignite |
| Milton R Young | ND | 1 | None | Lignite |
| Monticello | TX | 1 | None | Lignite |
| Stanton | ND | 1 | None | Lignite |

TABLE 9f. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH NO SCRUBBER USING SUBBITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Allen S. King | MN | 1 | None | Subbituminous |
| Alma | WI | 4 | None | Subbituminous |
| Alma | WI | 5 | None | Subbituminous |
| Ames Two | IA | 7 | None | Subbituminous |
| Ames Two | IA | 8 | None | Subbituminous |
| Asbury | MO | 1 | None | Subbituminous |
| BC Cobb | MI | 4 | None | Subbituminous |
| BC Cobb | MI | 5 | None | Subbituminous |
| Belle River | MI | 1 | None | Subbituminous |
| Belle River | MI | 2 | None | Subbituminous |
| Big Cajun Two | LA | 1 | None | Subbituminous |
| Big Cajun Two | LA | 2 | None | Subbituminous |
| Big Cajun Two | LA | 3 | None | Subbituminous |
| Black Dog | MN | 1 | None | Subbituminous |
| Black Dog | MN | 3 | None | Subbituminous |
| Black Dog | MN | 4 | None | Subbituminous |
| Boardman | OR | 1 | None | Subbituminous |
| Burlington | IA | 1 | None | Subbituminous |
| Centralia | WA | 1 | None | Subbituminous |
| Centralia | WA | 2 | None | Subbituminous |
| Cherokee | CO | 2 | None | Subbituminous |
| Cherokee | CO | 3 | None | Subbituminous |
| Clay Boswell | MN | 1 | None | Subbituminous |
| Clay Boswell | MN | 2 | None | Subbituminous |
| Clay Boswell | MN | 3 | None | Subbituminous |
| Coleto Creek | TX | 1 | None | Subbituminous |
| Columbia | WI | 1 | None | Subbituminous |
| Columbia | WI | 2 | None | Subbituminous |
| Comanche | CO | 1 | None | Subbituminous |
| Comanche | CO | 2 | None | Subbituminous |
| Council Bluffs | IA | 1 | None | Subbituminous |
| Council Bluffs | IA | 2 | None | Subbituminous |
| Council Bluffs | IA | 3 | None | Subbituminous |
| Crawford | IL | 7 | None | Subbituminous |
| Crawford | IL | 8 | None | Subbituminous |
| Dave Johnston | WY | 1 | None | Subbituminous |
| Dave Johnston | WY | 2 | None | Subbituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Dave Johnston | WY | 3 | None | Subbituminous |
| DH Mitchell | IN | 4 | None | Subbituminous |
| DH Mitchell | IN | 5 | None | Subbituminous |
| DH Mitchell | IN | 6 | None | Subbituminous |
| DH Mitchell | IN | 11 | None | Subbituminous |
| Drake | CO | 5 | None | Subbituminous |
| Drake | CO | 6 | None | Subbituminous |
| Drake | CO | 7 | None | Subbituminous |
| Edgewater | WI | 3 | None | Subbituminous |
| Edgewater | WI | 4 | None | Subbituminous |
| Edgewater | WI | 5 | None | Subbituminous |
| Fayette | TX | 1 | None | Subbituminous |
| Fayette | TX | 2 | None | Subbituminous |
| Fisk Street | IL | 19 | None | Subbituminous |
| Flint Creek | AR | 1 | None | Subbituminous |
| George Neal North | IA | 1 | None | Subbituminous |
| George Neal North | IA | 2 | None | Subbituminous |
| George Neal North | IA | 3 | None | Subbituminous |
| George Neal South | IA | 4 | None | Subbituminous |
| Gerald Gentleman | NE | 1 | None | Subbituminous |
| Gerald Gentleman | NE | 2 | None | Subbituminous |
| GRDA | OK | 1 | None | Subbituminous |
| Harrington | TX | 1 | None | Subbituminous |
| Harrington | TX | 2 | None | Subbituminous |
| Harrington | TX | 3 | None | Subbituminous |
| Hastings | NE | 1 | None | Subbituminous |
| Hawthorn | MO | 5 | None | Subbituminous |
| High Bridge | MN | 5 | None | Subbituminous |
| High Bridge | MN | 6 | None | Subbituminous |
| Hoot Lake | MN | 3 | None | Subbituminous |
| Hoot Lake | MN | 2 | None | Subbituminous |
| Hugo | OK | 1 | None | Subbituminous |
| Iatan | MO | 1 | None | Subbituminous |
| Independence | AR | 1 | None | Subbituminous |
| Independence | AR | 2 | None | Subbituminous |
| Irvington | AZ | 4 | None | Subbituminous |
| JE Corette | MT | 1 | None | Subbituminous |
| Joliet | IL | 6 | None | Subbituminous |
| Joliet | IL | 7 | None | Subbituminous |
| Joliet | IL | 8 | None | Subbituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Joppa | IL | 1 | None | Subbituminous |
| Joppa | IL | 2 | None | Subbituminous |
| Joppa | IL | 3 | None | Subbituminous |
| Joppa | IL | 4 | None | Subbituminous |
| Joppa | IL | 5 | None | Subbituminous |
| Joppa | IL | 6 | None | Subbituminous |
| JP Pulliam | WI | 3 | None | Subbituminous |
| JP Pulliam | WI | 4 | None | Subbituminous |
| JP Pulliam | WI | 5 | None | Subbituminous |
| JP Pulliam | WI | 6 | None | Subbituminous |
| JP Pulliam | WI | 7 | None | Subbituminous |
| JP Pulliam | WI | 8 | None | Subbituminous |
| JT Deely | TX | 1 | None | Subbituminous |
| JT Deely | TX | 2 | None | Subbituminous |
| Kaw | KS | 1 | None | Subbituminous |
| Kaw | KS | 3 | None | Subbituminous |
| La Cygne | KS | 2 | None | Subbituminous |
| Labadie | MO | 1 | None | Subbituminous |
| Labadie | MO | 2 | None | Subbituminous |
| Labadie | MO | 3 | None | Subbituminous |
| Labadie | MO | 4 | None | Subbituminous |
| Lansing | IA | 3 | None | Subbituminous |
| Lansing | IA | 4 | None | Subbituminous |
| Lawrence | KS | 3 | None | Subbituminous |
| LD Wright | NE | 8 | None | Subbituminous |
| Louisa | IA | 1 | None | Subbituminous |
| Madgett | WI | 1 | None | Subbituminous |
| Michigan City | IN | 12 | None | Subbituminous |
| Mohave | NV | 1 | None | Subbituminous |
| Mohave | NV | 2 | None | Subbituminous |
| Monroe | MI | 1 | None | Subbituminous |
| Monroe | MI | 2 | None | Subbituminous |
| Monroe | MI | 3 | None | Subbituminous |
| Monroe | MI | 4 | None | Subbituminous |
| Montrose | MO | 1 | None | Subbituminous |
| Montrose | MO | 2 | None | Subbituminous |
| Montrose | MO | 3 | None | Subbituminous |
| Muscatine | IA | 8 | None | Subbituminous |
| Muskogee | OK | 4 | None | Subbituminous |
| Muskogee | OK | 5 | None | Subbituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Muskogee | OK | 6 | None | Subbituminous |
| Naughton | WY | 1 | None | Subbituminous |
| Naughton | WY | 2 | None | Subbituminous |
| Navajo | AZ | 1 | None | Subbituminous |
| Navajo | AZ | 2 | None | Subbituminous |
| Navajo | AZ | 3 | None | Subbituminous |
| Nearman Creek | KS | 1 | None | Subbituminous |
| Nebraska City | NE | 1 | None | Subbituminous |
| Nelson Dewey | WI | 1 | None | Subbituminous |
| Nelson Dewey | WI | 2 | None | Subbituminous |
| New Madrid | MO | 1 | None | Subbituminous |
| New Madrid | MO | 2 | None | Subbituminous |
| North Omaha | NE | 1 | None | Subbituminous |
| North Omaha | NE | 2 | None | Subbituminous |
| North Omaha | NE | 3 | None | Subbituminous |
| North Omaha | NE | 4 | None | Subbituminous |
| North Omaha | NE | 5 | None | Subbituminous |
| North Valmy | NV | 1 | None | Subbituminous |
| Northeastern | OK | 3 | None | Subbituminous |
| Northeastern | OK | 4 | None | Subbituminous |
| Ottumwa | IA | 1 | None | Subbituminous |
| Pawnee | CO | 1 | None | Subbituminous |
| Platte | NE | 1 | None | Subbituminous |
| Pleasant Prairie | WI | 1 | None | Subbituminous |
| Pleasant Prairie | WI | 2 | None | Subbituminous |
| Powerton | IL | 5 | None | Subbituminous |
| Powerton | IL | 6 | None | Subbituminous |
| Prairie Creek | IA | 3 | None | Subbituminous |
| Prairie Creek | IA | 4 | None | Subbituminous |
| Presque Isle | MI | 2 | None | Subbituminous |
| Presque Isle | MI | 3 | None | Subbituminous |
| Presque Isle | MI | 4 | None | Subbituminous |
| Presque Isle | MI | 5 | None | Subbituminous |
| Presque Isle | MI | 6 | None | Subbituminous |
| Presque Isle | MI | 7 | None | Subbituminous |
| Presque Isle | MI | 8 | None | Subbituminous |
| Presque Isle | MI | 9 | None | Subbituminous |
| Riverside | MN | 8 | None | Subbituminous |
| Riverton | KS | 7 | None | Subbituminous |
| Riverton | KS | 8 | None | Subbituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Rockport | IN | 1 | None | Subbituminous |
| Rockport | IN | 2 | None | Subbituminous |
| Rodemacher | LA | 2 | None | Subbituminous |
| RS Nelson | LA | 6 | None | Subbituminous |
| Rush Island | MO | 1 | None | Subbituminous |
| Rush Island | MO | 2 | None | Subbituminous |
| Scherer | GA | 1 | None | Subbituminous |
| Scherer | GA | 2 | None | Subbituminous |
| Scherer | GA | 3 | None | Subbituminous |
| Scherer | GA | 4 | None | Subbituminous |
| Sheldon | NE | 1 | None | Subbituminous |
| Sheldon | NE | 2 | None | Subbituminous |
| Sibley | MO | 1 | None | Subbituminous |
| Sibley | MO | 2 | None | Subbituminous |
| Sibley | MO | 3 | None | Subbituminous |
| Sioux | MO | 1 | None | Subbituminous |
| Sioux | MO | 2 | None | Subbituminous |
| Sooner | OK | 1 | None | Subbituminous |
| Sooner | OK | 2 | None | Subbituminous |
| St. Clair | MI | 1 | None | Subbituminous |
| St. Clair | MI | 2 | None | Subbituminous |
| St. Clair | MI | 3 | None | Subbituminous |
| St. Clair | MI | 4 | None | Subbituminous |
| St. Clair | MI | 6 | None | Subbituminous |
| State Line | IN | 3 | None | Subbituminous |
| State Line | IN | 4 | None | Subbituminous |
| Tecumseh | KS | 9 | None | Subbituminous |
| Tecumseh | KS | 10 | None | Subbituminous |
| Thomas Hill | MO | 1 | None | Subbituminous |
| Thomas Hill | MO | 2 | None | Subbituminous |
| Thomas Hill | MO | 3 | None | Subbituminous |
| Tolk | TX | 1 | None | Subbituminous |
| Tolk | TX | 2 | None | Subbituminous |
| Valmont | CO | 5 | None | Subbituminous |
| VJ Daniel | MS | 1 | None | Subbituminous |
| VJ Daniel | MS | 2 | None | Subbituminous |
| WA Parish | TX | 5 | None | Subbituminous |
| WA Parish | TX | 6 | None | Subbituminous |
| WA Parish | TX | 7 | None | Subbituminous |
| Waukegan | IL | 6 | None | Subbituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Waukegan | IL | 7 | None | Subbituminous |
| Waukegan | IL | 8 | None | Subbituminous |
| Welsh | TX | 1 | None | Subbituminous |
| Welsh | TX | 2 | None | Subbituminous |
| Welsh | TX | 3 | None | Subbituminous |
| Weston | WI | 1 | None | Subbituminous |
| Weston | WI | 2 | None | Subbituminous |
| Weston | WI | 3 | None | Subbituminous |
| White Bluff | AR | 1 | None | Subbituminous |
| White Bluff | AR | 2 | None | Subbituminous |
| Will County | IL | 1 | None | Subbituminous |
| Will County | IL | 2 | None | Subbituminous |
| Will County | IL | 3 | None | Subbituminous |
| Will County | IL | 4 | None | Subbituminous |

TABLE 9g. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH WET SCRUBBERS USING BITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| AB Brown | IN | 1 | Wet | Bituminous |
| AB Brown | IN | 2 | Wet | Bituminous |
| Baily | IN | 7 | Wet | Bituminous |
| Baily | IN | 8 | Wet | Bituminous |
| Big Bend | FL | 4 | Wet | Bituminous |
| BL England | NJ | 2 | Wet | Bituminous |
| Bonanza | UT | 1 | Wet | Bituminous |
| Bruce Mansfield | PA | 1 | Wet | Bituminous |
| Bruce Mansfield | PA | 2 | Wet | Bituminous |
| Bruce Mansfield | PA | 3 | Wet | Bituminous |
| Cane Run | KY | 4 | Wet | Bituminous |
| Cane Run | KY | 5 | Wet | Bituminous |
| Cane Run | KY | 6 | Wet | Bituminous |
| CD McIntosh, Jr. | FL | 3 | Wet | Bituminous |
| CH Stanton | FL | 1 | Wet | Bituminous |
| CH Stanton | FL | 2 | Wet | Bituminous |
| Cholla | AZ | 1 | Wet | Bituminous |
| Clover | VA | 1 | Wet | Bituminous |
| Conemaugh | PA | 1 | Wet | Bituminous |
| Conemaugh | PA | 2 | Wet | Bituminous |
| Conesville | OH | 4 | Wet | Bituminous |
| Conesville | OH | 5 | Wet | Bituminous |
| Conesville | OH | 6 | Wet | Bituminous |
| Cope | SC | 1 | Wet | Bituminous |
| Coronado | AZ | 2 | Wet | Bituminous |
| Charles R. Lowman | AL | 2 | Wet | Bituminous |
| Charles R. Lowman | AL | 3 | Wet | Bituminous |
| Craig | CO | 2 | Wet | Bituminous |
| Cromby | PA | 1 | Wet | Bituminous |
| Cross | SC | 2 | Wet | Bituminous |
| Cross | SC | 1 | Wet | Bituminous |
| Cumberland | TN | 1 | Wet | Bituminous |
| Cumberland | TN | 2 | Wet | Bituminous |
| Dallman | IL | 3 | Wet | Bituminous |
| DB Wilson | KY | 1 | Wet | Bituminous |
| Duck Creek | IL | 1 | Wet | Bituminous |
| East Bend | KY | 2 | Wet | Bituminous |
| Eddystone | PA | 1 | Wet | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Eddystone | PA | 2 | Wet | Bituminous |
| Elmer Smith | KY | 1 | Wet | Bituminous |
| Elrama | PA | 1 | Wet | Bituminous |
| Elrama | PA | 2 | Wet | Bituminous |
| Elrama | PA | 3 | Wet | Bituminous |
| Elrama | PA | 4 | Wet | Bituminous |
| FB Culley | IN | 2 | Wet | Bituminous |
| FB Culley | IN | 3 | Wet | Bituminous |
| Gen. JM Gavin | OH | 1 | Wet | Bituminous |
| Gen. JM Gavin | OH | 2 | Wet | Bituminous |
| Ghent | KY | 1 | Wet | Bituminous |
| Gibson | IN | 4 | Wet | Bituminous |
| Gibson | IN | 5 | Wet | Bituminous |
| Hamilton | OH | 9 | Wet | Bituminous |
| Harrison | WV | 1 | Wet | Bituminous |
| Harrison | WV | 2 | Wet | Bituminous |
| Harrison | WV | 3 | Wet | Bituminous |
| Hunter | UT | 1 | Wet | Bituminous |
| Hunter | UT | 2 | Wet | Bituminous |
| Hunter | UT | 3 | Wet | Bituminous |
| Intermountain | UT | 1 | Wet | Bituminous |
| Intermountain | UT | 2 | Wet | Bituminous |
| JB Sims | MI | 3 | Wet | Bituminous |
| JR Endicott | MI | 1 | Wet | Bituminous |
| Jim Bridger | WY | 2 | Wet | Bituminous |
| Kintigh | NY | 1 | Wet | Bituminous |
| La Cygne | KS | 1 | Wet | Bituminous |
| Lawrence | KS | 5 | Wet | Bituminous |
| Marion | IL | 4 | Wet | Bituminous |
| Merom | IN | 1 | Wet | Bituminous |
| Merom | IN | 2 | Wet | Bituminous |
| Mill Creek | KY | 1 | Wet | Bituminous |
| Mill Creek | KY | 2 | Wet | Bituminous |
| Mill Creek | KY | 3 | Wet | Bituminous |
| Mill Creek | KY | 4 | Wet | Bituminous |
| Milliken | NY | 1 | Wet | Bituminous |
| Milliken | NY | 2 | Wet | Bituminous |
| Mitchell | PA | 3 | Wet | Bituminous |
| Mount Storm | WV | 3 | Wet | Bituminous |
| Muscatine | IA | 9 | Wet | Bituminous |
| Naughton | WY | 3 | Wet | Bituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Newton | IL | 1 | Wet | Bituminous |
| Niles | OH | 1 | Wet | Bituminous |
| Paradise | KY | 1 | Wet | Bituminous |
| Paradise | KY | 2 | Wet | Bituminous |
| Pearl Station | Il | 1 | Wet | Bituminous |
| Petersburg | IN | 1 | Wet | Bituminous |
| Petersburg | IN | 2 | Wet | Bituminous |
| Petersburg | IN | 3 | Wet | Bituminous |
| Petersburg | IN | 4 | Wet | Bituminous |
| Pleasants | WV | 1 | Wet | Bituminous |
| Pleasants | WV | 2 | Wet | Bituminous |
| Port Washington | WI | 1 | Wet | Bituminous |
| Port Washington | WI | 4 | Wet | Bituminous |
| RD Green | KY | 1 | Wet | Bituminous |
| RD Green | KY | 2 | Wet | Bituminous |
| RD Morrow | MS | 1 | Wet | Bituminous |
| RD Morrow | MS | 2 | Wet | Bituminous |
| Reid Gardner | NV | 1 | Wet | Bituminous |
| Reid Gardner | NV | 2 | Wet | Bituminous |
| Reid Gardner | NV | 3 | Wet | Bituminous |
| Reid Gardner | NV | 4 | Wet | Bituminous |
| RM Schahfer | IN | 17 | Wet | Bituminous |
| RM Schahfer | IN | 18 | Wet | Bituminous |
| San Juan | NM | 3 | Wet | Bituminous |
| Seminole | FL | 1 | Wet | Bituminous |
| Seminole | FL | 2 | Wet | Bituminous |
| Sikeston | MO | 1 | Wet | Bituminous |
| Southwest | MO | 1 | Wet | Bituminous |
| St. Johns River | FL | 1 | Wet | Bituminous |
| St. Johns River | FL | 2 | Wet | Bituminous |
| Trimble County | KY | 1 | Wet | Bituminous |
| WA Parish | TX | 8 | Wet | Bituminous |
| WH Bimmer | OH | 1 | Wet | Bituminous |
| Widows Creek | AL | 7 | Wet | Bituminous |
| Widows Creek | AL | 8 | Wet | Bituminous |
| Winyah | SC | 2 | Wet | Bituminous |
| Winyah | SC | 3 | Wet | Bituminous |
| Winyah | SC | 4 | Wet | Bituminous |
| Yates | GA | 1 | Wet | Bituminous |
| Zimmer | OH | 1 | Wet | Bituminous |

TABLE 9h. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH WET SCRUBBERS USING LIGNITE COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Antelope Valley | ND | 1 | Wet | Lignite |
| Antelope Valley | ND | 2 | Wet | Lignite |
| Coal Creek | ND | 1 | Wet | Lignite |
| Coal Creek | ND | 2 | Wet | Lignite |
| Dolet Hills | LA | 1 | Wet | Lignite |
| Gibbons Creek | TX | 1 | Wet | Lignite |
| Limestone | TX | 1 | Wet | Lignite |
| Martin Lake | TX | 1 | Wet | Lignite |
| Martin Lake | TX | 2 | Wet | Lignite |
| Martin Lake | TX | 3 | Wet | Lignite |
| Milton R. Young | ND | 2 | Wet | Lignite |
| Monticello | TX | 2 | Wet | Lignite |
| San Miguel | TX | 1 | Wet | Lignite |
| Sandow | TX | 4 | Wet | Lignite |

TABLE 9i. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH WET SCRUBBERS USING SUBBITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Apache Station | AZ | 2 | Wet | Subbituminous |
| Apache Station | AZ | 3 | Wet | Subbituminous |
| Cholla | AZ | 2 | Wet | Subbituminous |
| Cholla | AZ | 3 | Wet | Subbituminous |
| Cholla | AZ | 4 | Wet | Subbituminous |
| Clay Boswell | MN | 4 | Wet | Subbituminous |
| Colstrip | MT | 1 | Wet | Subbituminous |
| Colstrip | MT | 2 | Wet | Subbituminous |
| Colstrip | MT | 3 | Wet | Subbituminous |
| Colstrip | MT | 4 | Wet | Subbituminous |
| Coronado | AZ | 1 | Wet | Subbituminous |
| Craig | CO | 1 | Wet | Subbituminous |
| Dave Johnston | WY | 4 | Wet | Subbituminous |
| Elk River | MN | 1 | Wet | Subbituminous |
| Escalante | NM | 1 | Wet | Subbituminous |
| Fayette | TX | 3 | Wet | Subbituminous |
| Four Corners | NM | 1 | Wet | Subbituminous |
| Four Corners | NM | 2 | Wet | Subbituminous |
| Four Corners | NM | 3 | Wet | Subbituminous |
| Four Corners | NM | 4 | Wet | Subbituminous |
| Four Corners | NM | 5 | Wet | Subbituminous |
| Huntington | UT | 1 | Wet | Subbituminous |
| Jeffrey | KS | 1 | Wet | Subbituminous |
| Jeffrey | KS | 2 | Wet | Subbituminous |
| Jeffrey | KS | 3 | Wet | Subbituminous |
| Jim Bridger | WY | 1 | Wet | Subbituminous |
| Jim Bridger | WY | 3 | Wet | Subbituminous |
| Jim Bridger | WY | 4 | Wet | Subbituminous |
| JK Spruce | TX | 1 | Wet | Subbituminous |
| Laramie River | WY | 1 | Wet | Subbituminous |
| Laramie River | WY | 2 | Wet | Subbituminous |
| Laramie River | WY | 3 | Wet | Subbituminous |
| Lawrence | KS | 4 | Wet | Subbituminous |
| Limestone | TX | 2 | Wet | Subbituminous |
| Oklaunion | TX | 1 | Wet | Subbituminous |
| Pirkey | TX | 1 | Wet | Subbituminous |
| Plains | NM | 1 | Wet | Subbituminous |
| Sam Seymour | TX | 3 | Wet | Subbituminous |

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| San Juan | NM | 1 | Wet | Subbituminous |
| San Juan | NM | 2 | Wet | Subbituminous |
| San Juan | NM | 4 | Wet | Subbituminous |
| Sherburne County | MN | 1 | Wet | Subbituminous |
| Sherburne County | MN | 2 | Wet | Subbituminous |
| SYL Laskin | MN | 1 | Wet | Subbituminous |
| SYL Laskin | MN | 2 | Wet | Subbituminous |
| Thomas Hill | MO | 3 | Wet | Subbituminous |

TABLE 9j. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH FLUIDIZED BED COMBUSTION USING BITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Nucla | CO | 4 | FBC | Bituminous |
| Shawnee | KY | 9 | FBC | Bituminous |
| Tidd | OH | UNK | FBC | Bituminous |

TABLE 9k. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH FLUIDIZED BED COMBUSTION USING LIGNITE COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Heskett | ND | 1 | FBC | Lignite |
| Heskett | ND | 2 | FBC | Lignite |
| TNP One | TX | 1 | FBC | Lignite |
| TNP One | TX | 2 | FBC | Lignite |

TABLE 9l. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH FLUIDIZED BED COMBUSTION USING SUBBITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Black Dog | MN | 2 | FBC | Subbituminous |

TABLE 9m. COAL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS WITH COAL GASIFICATION USING BITUMINOUS COAL

| Plant | State | Unit no. | Scrubber type | Coal source |
|---|---|---|---|---|
| Polk Power Station | FL | 1 | Coal Gas | Bituminous |
| Tracy | NV | UNK | Coal Gas | Bituminous |
| Wabash River | IN | 1 | Coal Gas | Bituminous |

TABLE 10. NONUTILITY GENERATORS

| Plant | State |
|---|---|
| #1 Power Plant - Richmond, CA | CA |
| 2 AC Station | IN |
| 3 AC Station | IN |
| 4 AC Station | IN |
| 5 AC Station | IN |
| 251 Project | CA |
| 33 East 85-B | CA |
| 76 Products Company | CA |
| A.W. Hoch | CA |
| Abbott Power Plant - Univ of IL/Urbana-Champaign | IL |
| ACE Cogeneration Plant | CA |
| Ada Cogeneration Limited Partnership | MI |
| AES Barbers Point, Incorporated | HI |
| AES BV Partners Beaver Valley | PA |
| AES Deepwater, Incorporated | TX |
| AES Placerita Incorporated | CA |
| AES Shady Point, Incorporated | OK |
| AES Thames, Incorporated | CT |
| AES Warrior Run Cogeneration Facility | MD |
| AG - Energy L/P | NY |
| Agnews Cogeneration Project | CA |
| Alabama Pine Pulp Company, Incorporated | AL |
| Alabama River Pulp Company | AL |
| Albany Paper Mill | OR |
| Alliance Refinery | LA |
| Alloy Steam Station | WV |
| Alta, Iowa Project | IA |
| Altech III | CA |
| American Atlas #1 Cogeneration Plant | CO |
| Androscoggin Mill | ME |
| Anheuser-Busch, Incorporated - St. Louis Brewery | MO |
| Anschutz Ranch East | WY |
| Arbor Hills Generating Facility | MI |
| Arcadian Fertilizer, L/P | LA |
| Arcadian Fertilizer, L/P | TN |
| Arcadian Renewable Power Corporation | CA |
| Archbald Cogeneration Plant | PA |
| Arco Placerita Cogen | CA |
| ARCO Wilmington Calciner | CA |

| Plant | State |
|---|---|
| Argus Cogen Plant | CA |
| Arkansas Operations | AR |
| Ashdown | AR |
| Auburndale Power Partners, Limited Partnership | FL |
| Auger Falls | ID |
| Badger Creek Cogen | CA |
| Bailey Utility Plant | NC |
| Basis - Texas City Refinery | TX |
| Basis - Houston Refinery | TX |
| Baton Rouge Turbine Generator | LA |
| Bayonne Cogen Plant | NJ |
| Bayou Cogeneration Plant | TX |
| Baytown Turbine Generator Project | TX |
| Bear Canyon | CA |
| Bear Mountain Cogen | CA |
| Beaumont Refinery | TX |
| Beaver - Ashland | ME |
| Beaver - Livermore Falls | ME |
| Beaver - Cadillac | MI |
| Beechwood Energy Resources | PA |
| Bellingham Cogeneration Facility | MA |
| Berlin - Gorham | NH |
| Berry Cogen | CA |
| Bethlehem Facility | PA |
| Binghamton Cogeneration Plant | NY |
| Biomass One L/P | OR |
| Biron Division | WI |
| BIT Power Generation Plant | TN |
| Blandin Paper Company | MN |
| Blue Mountain Power, L/P | TX |
| Boise Cascade/International Falls | MN |
| Borden Chemicals and Plastics | LA |
| Borger Plant | TX |
| Bowater Newsprint Calhoun Operations | TN |
| BP Chemicals - Green Lake Plant | TX |
| Brady Power Project | NV |
| Bridgeport Resco | CT |
| Brooklyn Navy Yard Cogeneration Partners, L.P. | NY |
| Brunswick Pulp and Paper Company | GA |
| Brush Cogen Project Phase 1 (CPP) | CO |

| Plant | State |
|---|---|
| Brush Power Project Phase 2 (BCP) | CO |
| Bryant Sugar House | FL |
| Buckeye Florida L/P | FL |
| Bucksport, Maine | ME |
| Burney Forest Products | CA |
| Burns Harbor Plant | IN |
| C.R. Wing Cogeneration Plant | TX |
| CA II (Chlor Alkali II) | LA |
| Calderwood | TN |
| Calpine Gilroy Cogen, LP | CA |
| Cambria CoGen | PA |
| Camden Cogen L.P. | NJ |
| Camden Mill | AR |
| Cannon Energy Corporation | CA |
| Canton Cogeneration Facility | NY |
| Canton, North Carolina | NC |
| Capital District Energy Center Cogen Assoc. | CT |
| Cardinal Cogen | CA |
| Cargill Fertilizer, Inc. | FL |
| Cargill Fertilizer, Inc. (Bartow) | FL |
| Carney’s Point | NJ |
| Carson Cogeneration Company | CA |
| Cedar Bay Generating Company L/P | FL |
| Cedar Rapids | IA |
| Cedar Springs | GA |
| Celanese Engineering Resin, Incorporated | TX |
| Celco Plant | VA |
| Central Power and Lime, Incorporated | FL |
| Central Production Facility #1 | AK |
| Central Production Facility #2 | AK |
| Central Production Facility #3 | AK |
| Central Wayne Air Quality/Energy Recovery Proj | MI |
| CFI Plant City Phosphate Complex | FL |
| Chalk Cliff Cogen | CA |
| Chambers Cogeneration Limited Partnership | NJ |
| Charleston | SC |
| Cheoah | NC |
| Chesapeake Paper Products Co. | VA |
| Chester Operations | PA |
| Chilhowee | TN |

| Plant | State |
|---|---|
| Chino Mines Company | NM |
| Chocolate Bayou Plant | TX |
| CII Carbon LLC | LA |
| CITGO Refinery Powerhouse | LA |
| Civic Center | CA |
| Clairton Works | PA |
| Clear Lake Cogeneration Limited | TX |
| Clinton | IL |
| Coalinga Cogeneration Company | CA |
| Cogen Energy Technology L/P - Fort Orange Facility | NY |
| CoGen Lyondell, Incorporated | TX |
| Cogenron, Incorporated | TX |
| Cogentrix Elizabethtown | NC |
| Cogentrix Hopewell | VA |
| Cogentrix Kenansville | NC |
| Cogentrix Lumberton | NC |
| Cogentrix of Richmond, Incorporated | VA |
| Cogentrix Portsmouth | VA |
| Cogentrix Roxboro | NC |
| Cogentrix Southport | NC |
| Collieville | CA |
| Colonie Cogeneration Plant | NY |
| Colstrip Energy Limited Partnership | MT |
| Columbus, MS | MS |
| Colver Power Project | PA |
| Commonwealth Atlantic Limited Partnership | VA |
| Continental Energy Associates | PA |
| Copper Range Company | MI |
| Corn Products - Illinois | IL |
| Corn Wet Milling Plant | TN |
| Corona Cogen | CA |
| Corpus Christi Plant | TX |
| Corpus Christi Refinery | TX |
| Coso Energy Developers | CA |
| Coso Finance Partners | CA |
| Coso Power Developers | CA |
| Cottage Grove Cogeneration Facility | MN |
| Courtland Mill | AL |
| Covington Facility | VA |
| Craven County Wood Energy L/P | NC |

| Plant | State |
|---|---|
| Crossett Paper | AR |
| Dartmouth Power Associates | MA |
| Decatur | IL |
| Decatur Plant Cogen | IL |
| Deer Island Treatment Plant | MA |
| Deer Park Plant | TX |
| Delano Energy Company Incorporated | CA |
| Delaware City Plant | DE |
| DeRidder Mill | LA |
| Dexter Cogeneration Facility | CT |
| Dexzel | CA |
| Dillard Complex | OR |
| Donnells Power Plant | CA |
| Doswell Combined Cycle Facility | VA |
| Double 'C' | CA |
| Dow Chemical Company Pittsburg Site | CA |
| Dow Corning Midland Plant | MI |
| Dutch Flats #2 | CA |
| Dwayne Collier Battle Cogeneration Facility | NC |
| E.F. Oxnard, Oxnard Energy Facility | CA |
| Eagle Point Cogeneration | NJ |
| East Syracuse Cogeneration Facility | NY |
| East Third Street Power Plant | CA |
| Eastover Facility | SC |
| Ebensburg Power Company | PA |
| Eielson Air Force Base Central Heat | AK |
| El Segundo Refinery | CA |
| Encogen Four Partners, L.P. | NY |
| Encogen NW | WA |
| Encogen One | TX |
| Energy Development Corporation | FL |
| Enterprise Products Co. | TX |
| Erie Mill | PA |
| Exeter Energy Project | CT |
| Exxon Company USA - Baytown PP3/PP4 | TX |
| Fairfield Works | AL |
| Fairless Works | PA |
| Falls | NC |
| Federal Cogeneration Plant | CA |
| Finch, Pruyn and Company, Incorporated | NY |

| Plant | State |
|---|---|
| Flint River Operations | GA |
| Florida Coast Paper Co, LLC | FL |
| Formosa Plastics Corp | LA |
| Formosa Utility Venture, Limited | TX |
| Fort Drum Cogeneration  Facility | NY |
| Foster Wheeler Martinez, Incorporated | CA |
| Foster Wheeler Mt. Carmel, Incorporated | PA |
| Foster Wheeler Penn Resources Inc. | PA |
| FPB Cogen Facility | CA |
| Franklin Fine Paper Division | VA |
| Freehold Cogeneration Facility | NJ |
| Fresno Cogeneration Partners, L.P. | CA |
| Fulton Cogeneration Associates | NY |
| G.F. Weaton Power Station | PA |
| Gary Works | IN |
| Gaylord Container Corp. - Bogalusa | LA |
| Gaylord Container Corporation - Antioch | CA |
| GE Company Aircraft Engines | MA |
| Geismar | LA |
| Geismar Plant | LA |
| General Chemical | WY |
| General Electric - Erie, PA Power Station | PA |
| Genesee Power Station - Limited Partnership | MI |
| Geneva Steel | UT |
| Georgetown Mill | SC |
| Gilberton Power | PA |
| Gilman Paper Company | GA |
| Glenwood Springs Salt Project | CO |
| GM WFG Pontiac Site Power Plant | MI |
| Goaline, L.P. | CA |
| Goodyear Power Plant | OH |
| Gordonsville Energy L.P. | VA |
| Grant Town Facility | WV |
| Grayling Generating Station | MI |
| Grays Ferry Cogeneration Partnership | PA |
| Great Northern Paper | ME |
| Green Bay Mill | WI |
| Greenleaf Unit One | CA |
| Greenleaf Unit Two | CA |
| Growers Cogeneration Plant | CA |

| Plant | State |
|---|---|
| Gulf States Paper Corp. | AL |
| H-Power | HI |
| Halfmoon Cogeneration Project | NY |
| Hamilton, Ohio | OH |
| Hanford | CA |
| Harbor Cogeneration Company | CA |
| Hardee Power Station | FL |
| Harrisburg Facility | PA |
| Hartwell Energy Limited Partnership | GA |
| Hawaiian Coml. and Sugar Company | HI |
| Hennepin Energy Resource Co., L.P. | MN |
| Hermiston Generating Plant | OR |
| Hidalgo Smelter | NM |
| High Rock | NC |
| High Sierra | CA |
| HL Power Plant | CA |
| Hodge, Louisiana | LA |
| Hopewell Cogeneration | VA |
| Houston Chemical Complex Battleground Site | TX |
| Hudson River Mill | NY |
| Humboldt Pulp Mill | CA |
| IBM San Jose Standby Generator | CA |
| IMC-Agrico Company - New Wales Operations | FL |
| IMC-Agrico Company - South Pierce Operations | FL |
| IMC-Agrico Company, Uncle Sam Plant | LA |
| Indeck - Turners Falls Energy Center | MA |
| Indeck - Olean Energy Center | NY |
| Indeck - Oswego Energy Center | NY |
| Indeck - Pepperell Power Facility | MA |
| Indeck - Corinth Energy Center | NY |
| Indeck - Ilion Energy Center | NY |
| Indeck - Jonesboro Energy Center | ME |
| Indeck - Silver Springs Energy Center | NY |
| Indeck - West Enfield Energy Center | ME |
| Indeck - Yerkes Energy Center | NY |
| Indiana Army Ammunition Plant | IN |
| Indiana University of Pennsylvania | PA |
| Indiantown Cogeneration Facility | FL |
| Inland Paperboard and Packaging | TX |
| Inland Paperboard Packaging Rome Linerboard Mill | GA |

| Plant | State |
|---|---|
| International Paper - Augusta Mill | GA |
| International Paper, Riegelwood Mill | NC |
| Inter-Power/Ahlcon Partners | PA |
| Iowa State University | IA |
| IPC - Pine Bluff Mill | AR |
| Island End Cogeneration Project | MA |
| Ivorydale | OH |
| J.J. Elmore | CA |
| J.M. Leathers | CA |
| JCO-Oxides and Olefins Plant | TX |
| Jefferson Smurfit Corporation | FL |
| Jefferson Smurfit Corporation | CA |
| Jefferson Smurfit Corporation | CA |
| Jefferson Smurfit Corporation | AL |
| Jefferson Smurfit Corporation - Jacksonville | FL |
| John B. Rich Memorial Power Station | PA |
| Johnsonburg Mill | PA |
| Joliet Refinery | IL |
| Kaiser Aluminum | LA |
| Kalaeola Cogeneration Plant | HI |
| Kamine/Besicorp Allegany L.P. | NY |
| Kamine/Besicorp Beaver Falls L.P. | NY |
| Kamine/Besicorp Natural Dam L.P. | NY |
| Kamine/Besicorp South Glens Falls L.P. | NY |
| Kamine/Besicorp Carthage L.P. | NY |
| Kamine/Besicorp Syracuse L.P. | NY |
| Kannapolis Energy Partners | NC |
| Kannapolis Energy Partners LLC | NC |
| Kenai Ammonia Facility | AK |
| Kenilworth Energy Facility | NJ |
| Kennedy International Airport Cogen Facility | NY |
| Kern Front | CA |
| Kern River Cogeneration Company | CA |
| Kern River Eastridge | CA |
| Ketchikan Pulp Company | AK |
| Kimberly-Clark Coosa Pines | AL |
| King City Power Plant | CA |
| Kingsburg Cogeneration | CA |
| Kline Township Cogen. Facil. | PA |
| Koch Refining Company | TX |

| Plant | State |
| --- | --- |
| Kodak Park Site | NY |
| Kraft Division | WI |
| KW Livermore, LP | CA |
| L'Energia Limited Partnership | MA |
| Lackawanna Facility | NY |
| LaFarge Corporation - Alpena | MI |
| Lake Cogen, Limited | FL |
| Lakewood Cogeneration, L/P | NJ |
| Las Vegas Cogeneration Limited Partnership | NV |
| Leaf River | MS |
| Lederle Laboratories | NY |
| LG&E-Westmoreland Altavista | VA |
| LG&E-Westmoreland Hopewell | VA |
| LG&E-Westmoreland Rensselaer | NY |
| LG&E-Westmoreland Southampton | VA |
| Lihue Plantation Co., Ltd. | HI |
| Linde Wilmington | CA |
| Linden Cogen Plant | NJ |
| Lisburne Production Center | AK |
| Live Oak Cogen | CA |
| Lock Haven Mill | PA |
| Lockport Energy Assoc L/P Lockport Cogen Facility | NY |
| Logan Generating Plant | NJ |
| Lone Star Steel Company | TX |
| Longview Fibre Company | WA |
| Longview, WA | WA |
| Los Angeles Refinery, Wilmington Plant | CA |
| Louisiana Mill | LA |
| Loveridge Road Power Plant | CA |
| Lowell Cogeneration Plant | MA |
| Lowland | TN |
| LTV Steel - Cleveland Works | OH |
| LTV Steel - Indiana Harbor Works | IN |
| LTV Steel - Pittsburgh Works | PA |
| LTV Steel Mining Company - Schroeder | MN |
| Lucky Peak Power Plant Project | ID |
| Lufkin, Texas | TX |
| Luke Mill | MD |
| Lynchburg Cogen | TX |
| Lyonsdale Energy L/P | NY |

| Plant | State |
|---|---|
| M Street Jet | MA |
| MacMillan Bloedel Packaging, Inc. | AL |
| Madera Power Plant | CA |
| Maine Energy Recovery Company | ME |
| Mallard Lake Generating Facility | IL |
| Mansfield Mill | LA |
| March Point Cogeneration Company | WA |
| Marcus Hook Refinery Cogen | PA |
| Mass Institute of Technology - Central Utilities Plant | MA |
| Massena Energy Facility | NY |
| Masspower | MA |
| May Plant | SC |
| McKay Bay Facility | FL |
| McKittrick Cogen | CA |
| Mead Coated Board, Incorporated | AL |
| Mead Paper | MI |
| Mead - Fine Paper Division | OH |
| Mecca Plant | CA |
| Mecklenburg Cogeneration Facility | VA |
| Medical Area Total Energy Plant | MA |
| Mehoopany | PA |
| Mendota Biomass Power, Limited | CA |
| Michigan Power Limited Partnership | MI |
| Mid-Connecticut Facility | CT |
| Mid-Continent Power Company, Incorporated | OK |
| Mid-Set Cogeneration Company | CA |
| Midland Cogeneration Venture | MI |
| Midsun | CA |
| Midway Sunset Cogeneration Company | CA |
| Milagro Cogeneration Plant | NM |
| Milford Power Limited Partnership | NJ |
| Milford Power Limited Partnership | MA |
| Millbury Facility | MA |
| Minersville | PA |
| Mississippi Chemical Corporation | MS |
| Mobile Energy Services Company, L.L.C. | AL |
| Mobile Mill | AL |
| Mojave 3 | CA |
| Mojave 4 | CA |
| Mojave 5 | CA |

| Plant | State |
|---|---|
| Mojave 16 | CA |
| Mojave 17 | CA |
| Mojave 18 | CA |
| Mojave Cogeneration Company | CA |
| Mon Valley Energy Limited Partnership | PA |
| Mon Valley Works | PA |
| Montenay Montgomery L/P | PA |
| Monticello Paper | MS |
| Montrose Partners | CO |
| Morgantown Energy Facility | WV |
| Mosinee Paper Corporation, Pulp and Paper Division | WI |
| Moss Point Mill | MS |
| Mt. Poso Cogeneration | CA |
| Mulberry Cogeneration Facility | FL |
| Mulberry Phosphates, Inc. | FL |
| Multitrade of Pittsylvania County, L/P Plant | VA |
| Muskogee Mill | OK |
| Naheola Mill | AL |
| Narrows | NC |
| Natchez Mill | MS |
| Natrium Plant | WV |
| Naval Station Energy Facility | CA |
| Naval Submarine Base - Kings Bay, GA | GA |
| Nekoosa Mill | WI |
| Nelson Industrial Steam Company | LA |
| Nevada Cogen Assoc #2 (Black Mtn. Co-Gen. Plant) | NV |
| Nevada Cogeneration Associates #1 | NV |
| Nevada Sun-Peak Project | NV |
| New Bern, NC | NC |
| New Cornelia Branch Power Plant | AZ |
| New Orleans | LA |
| Newark Bay Cogeneration Project | NJ |
| Newgulf Cogen Plant | TX |
| Niagara Division | WI |
| Nichols Road Power Plant | CA |
| Nisa Cogeneration Facility | NY |
| Norcon Facility | PA |
| Nordic Power of South Point I | AZ |
| North American Fibers Corporation | TN |
| North Island Energy Facility | CA |

| Plant | State |
|---|---|
| Northeastern Power Corporation | PA |
| Northhampton Generating Company, L.P. | PA |
| NTC/MCRD Energy Facility | CA |
| Nutra Sweet Kelco Company-San Diego | CA |
| O'Brien (Newark) Cogeneration, Inc. | NJ |
| O'Brien (Parlin) Cogeneration, Inc. | NJ |
| O'Brien California Cogen Limited | CA |
| Oak Creek Energy Systems Incorporated | CA |
| Oak Ridge Station #1 | NH |
| Ocean State Power | RI |
| Ocean State Power II | RI |
| OHA - Lawrence Thermal Conversion Facility | MA |
| Oildale Cogen | CA |
| Okeelanta Power Limited Partnership | FL |
| Old Town Division | ME |
| OLS Energy - Berkeley | CA |
| OLS Energy - Camarillo | CA |
| OLS Energy - Chino | CA |
| Onondaga Cogeneration | NY |
| Ontario Mill | CA |
| Orange Cogeneration Facility | FL |
| Orlando CoGen Limited, L.P. | FL |
| Ormesa I | CA |
| Osceola Power Limited Partnership | FL |
| Oxbow Power of North Tonawanda, New York, Inc. | NY |
| Oxnard | CA |
| Oyster Creek Unit VIII | TX |
| P.H. Glatfelter Company | PA |
| Palatka Operations | FL |
| Panda Brandywine, L/P | MD |
| Panda Kathleen, L/P | FL |
| Panda-Rosemary Limited Partnership | NC |
| Panther Creek Energy Facility | PA |
| Pasco Cogen, Limited | FL |
| Paulsboro Refinery | NJ |
| Pawtucket Power Associates | RI |
| Pedricktown Cogeneration Plant | NJ |
| Penobscot Energy Recovery Company | ME |
| Pensacola Florida Plant | FL |
| Pensacola, Florida | FL |

| Plant | State |
|---|---|
| Peoria | IL |
| Pepeekeo Power Plant | HI |
| Pfizer, Incorporated | CT |
| Phelps Dodge Tyrone, Inc. | NM |
| Philadelphia Refinery | PA |
| Pinetree Power Tamworth Inc. | NH |
| Pineville Mill | LA |
| Piney Creek Project | PA |
| Pitchess Cogeneration Station | CA |
| Pittsfield Generating Company L.P. | MA |
| Plant 31 (Paper Mill) | LA |
| Plymouth, NC | NC |
| Port Arthur Plant | TX |
| Port Arthur Refinery | TX |
| Port Arthur, Texas Refinery | TX |
| Port Hudson Pulp & Printing Paper | LA |
| Port of Stockton District Energy Facility | CA |
| Potlatch Corp Minnesota Pulp-Paper Div | MN |
| Potlatch Corp- Idaho Pulp and Paper Board | ID |
| Power and Utilities | LA |
| Power Station #3 | TX |
| Power Station #4 | TX |
| Powerhouse A | LA |
| PowerSmith Cogen Project | OK |
| PPG - Riverside | LA |
| PPG - Powerhouse C | LA |
| Prime Energy Limited Partnership | NJ |
| Project Orange Associates, L/P | NY |
| Pt. Comfort Operations | TX |
| Pt. Neches Plant | TX |
| Purdue University | IN |
| Quinnesec, Michigan | MI |
| Radford Army Ammunition Plant | VA |
| Rayonier Incorporation - Jesup Mill | GA |
| Rayonier - Fernandina Mill | FL |
| Repap Wisconsin, Incorporated | WI |
| Reynolds Metals Company - Sherwin Plant | TX |
| Rhinelander Paper Company | WI |
| Richmond Cogeneration Project | CA |
| Richmond Power Enterprise L.P. | VA |

| Plant | State |
| --- | --- |
| Ridge Generating Station | FL |
| Rio Bravo Fresno | CA |
| Rio Bravo Jasmin | CA |
| Rio Bravo Poso | CA |
| Rio Bravo Rocklin | CA |
| Rio Grande Cogen | TX |
| Ripon Mill | CA |
| Riverdale Mill | AL |
| Riverside Cement Company - Power House | CA |
| Riverwood International USA, Incorporated | GA |
| Roanoke Rapids, North Carolina | NC |
| Rouge Powerhouse #1 | MI |
| Rumford Cogeneration Company | ME |
| Rumford Falls Power Company | ME |
| Ryegate Power Station | VT |
| S & L Cogeneration | TX |
| S. D. Warren Company #1 Muskegon | MI |
| S. D. Warren Company #2 | ME |
| Sabine River Works | TX |
| Sacramento | CA |
| Saguaro Power Company | NV |
| Salinas River Cogeneration Company | CA |
| Salt City Energy Venture, L/P | NY |
| Salton Sea Unit #3 | CA |
| Salton Sea Unit #4 | CA |
| San Gabriel Mill | CA |
| San Joaquin Cogen | CA |
| Sandow | TX |
| Santa Ynez Facility | CA |
| Santeetlah | NC |
| Saranac Facility | NY |
| Sargent Canyon Cogeneration Company | CA |
| Sartell Mill | MN |
| Saugus Resco | MA |
| Savannah River Mill | GA |
| Sayreville Cogeneration Facility | NJ |
| Schuylkill Energy Resources | PA |
| Schuylkill Station (Turbine Generator #3) | PA |
| Scott Paper | PA |
| Scrubgrass Generating Company L/P | PA |

| Plant | State |
|---|---|
| SCTI/ Power Pak | CA |
| Seadrift Plant Union Carbide Corporation | TX |
| Seaford, Delaware Plant | DE |
| SEI Birchwood Power Facility | VA |
| Selkirk Cogen Partners, L.P. | NY |
| Seminole Kraft Corporation | FL |
| Seneca Power Partners, L/P | NY |
| Sheldon, Texas | TX |
| Shell Deer Park | TX |
| Shell Martinez Refining Company | CA |
| Sherman Energy Facility | ME |
| Silver Bay Power Company | MN |
| Sithe/Independence Station | NY |
| Sky River Partnership | CA |
| Sloss Industries Corporation | AL |
| Somerset Plant | ME |
| South Belridge Cogen Facility | CA |
| South Florida Cogeneration Associates | FL |
| Southeast Kern River Cogen | CA |
| Southeast Paper Manufacturing Co., Inc. | GA |
| Southport | NC |
| Sparrows Point | MD |
| Springfield, Oregon | OR |
| St. Francisville Mill | LA |
| St. Nicholas Cogeneration Project | PA |
| Steamboat II | NV |
| Steamboat III | NV |
| Sterling Energy Facility | NY |
| Stillwater Facility | NV |
| Stockton CoGen Company | CA |
| Stone Container Corporation - Hopewell Mill | VA |
| Stone Container Corporation - Panama City Hall | FL |
| Stone Container Corporation - Florence Mill | SC |
| Stone Savannah River Pulp and Paper Corporation | GA |
| Stone Southwest Corporation - Snow Flake | AZ |
| Stony Brook Cogeneration Plant | NY |
| Stratton Energy Associates | ME |
| Sumas Cogeneration Company L.P. | WA |
| Sunnyside Cogeneration Associates | UT |
| Suwannee River Chem. Complex | FL |

| Plant | State |
|---|---|
| Sweeny Cogeneration Facility | TX |
| Swift Creek Chemical Complex | FL |
| Sycamore Cogeneration Company | CA |
| T.B. Simon Power Plant | MI |
| Taft Plant Union Carbide Corporation | LA |
| Taunton Energy Center | MA |
| TBG Cogen | NY |
| Temple-Inland Forest Prod Corp - Bleached Paperboard Op. | TX |
| Tenaska III Texas Partners | TX |
| Tenaska IV Texas Partners Ltd. (Cleburne Cogen) | TX |
| Tenaska Washington Partners, L/P | WA |
| Tenaska Washington Partners II, L/P | WA |
| Tenn Eastman Div., a Div. of Eastman Chemical Co. | TN |
| Tenneco Packaging Counce Mill | TN |
| TES Filer City Station | MI |
| Texaco Los Angeles Plant | CA |
| Texarkana Mill | TX |
| Texas City Plant | TX |
| Texas City Plant Union Carbide Corporation | TX |
| Texas Petrochemicals Corp | TX |
| Texasgulf Inc.-PCS Phosphate - Aurora Division | NC |
| The Dow Chemical Company Texas Operations | TX |
| The Pacific Lumber Company | CA |
| Thermo Cogen Partnership L/P, a Delaware L/P | CO |
| Thermo Cogen Partnership L/P, a Delaware L/P | CO |
| Thermo Greeley, Incorporated | CO |
| Thermo Power and Electric, Incorporated | CO |
| Thilmany Pulp and Paper | WI |
| Ticonderoga Mill | NY |
| Tiger Bay Cogeneration Facility | FL |
| Tobaccoville Utility Plant | NC |
| Torrance Refinery | CA |
| Total Energy Facilities | CA |
| Tracy Biomass Plant | CA |
| Trigen-Colorado Energy Corp. | CO |
| Trigen-Nassau Energy Corporation | NY |
| Tropicana Products Incorporated/Bradenton Cogen | FL |
| Tuckertown | NC |
| US Agri-Chemicals Corp - Fort Meade Chemical Prod. | FL |
| U.S. Borax Incorporated | CA |

| Plant | State |
|---|---|
| UCLA South Campus Central Chiller Cogen Project | CA |
| UDG Niagara Falls Cogeneration Facility | NY |
| Ultrapower Chinese Station | CA |
| UNC-Chapel Hill Power Plant | NC |
| Union Camp Corporation - Prattville | AL |
| Union Camp Corporation - Savannah | GA |
| United Cogen Incorporated | CA |
| United Technologies | CT |
| University of Colorado | CO |
| University of Iowa - Main Power Plant | IA |
| University of Michigan | MI |
| University of Missouri-Columbia Power Plant | MO |
| University of Texas at Austin | TX |
| Unocal - San Francisco Refinery | CA |
| Utility Plants Section | AK |
| Valero Refinery | TX |
| Valliant, OK | OK |
| Ventron Cogenerational Project | MA |
| Vicksburg Mill | MS |
| Victoria, Texas Plant | TX |
| Victory Garden | CA |
| Victory Garden Phase IV Partnership | CA |
| Vineland Cogeneration Plant | NJ |
| Vitamins and Fine Chemicals | NJ |
| Vulcan | CA |
| Wadham Energy Limited Partnership | CA |
| Warbasse Cogen Facility | NY |
| Warrior | NY |
| Washington Power Company L.P. | PA |
| Wasson CO2 Removal Plant | TX |
| Watson Cogeneration Company | CA |
| Watsonville Cogeneration Project | CA |
| WCI Steel Incorporated | OH |
| Weirton Steel Corporation | WV |
| West Ford Flat Power Plant | CA |
| West Point Facility | PA |
| Westchester Resco | NY |
| Westmoreland - LG&E Partners - Roanoke Valley I | NC |
| Westmoreland - LG&E Partners - Roanoke Valley II | NC |
| Westwood Energy Properties | PA |

| Plant | State |
|---|---|
| Wheelabrator Falls Inc. | PA |
| Wheelabrator Frackville Energy Company, Inc. | PA |
| Wheelabrator Lassen Inc. | CA |
| Wheelabrator Martell Inc. | CA |
| Wheelabrator North Broward | FL |
| Wheelabrator Norwalk Energy Company Inc. | CA |
| Wheelabrator Shasta | CA |
| Wheelabrator South Broward | FL |
| Wheelabrator Spokane Incorporated | WA |
| Whitewater Cogeneration Facility | WI |
| Whiting Refinery | IN |
| Wichita Falls Energy Company, Limited | TX |
| Wichita Plant | KS |
| Wilbur East Power Plant | CA |
| Wilbur West Power Plant | CA |
| Winslow, Maine | ME |
| Wisconsin Rapids Division | WI |
| Woodland Biomass Power, Limited | CA |
| Woodland Pulp and Paper | ME |
| Worcester Energy Company, Incorporated | ME |
| Yellowstone Energy Ltd Partnership | MT |
| York Cogen Facility | PA |
| Yuba City Cogeneration Partners L/P | CA |
| Yuma Cogeneration Associates | AZ |

Attachment 1

Section 114 of the Clean Air Act, as Amended

Attachment 2

Federal Register Notice Announcing Planned
Information Collection and Request for Comment

[Federal Register: April 9, 1998 (Volume 63, Number 68)]
[Notices]
[Page 17406-17409]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr09ap98-78]

=======================================================
-----------------------------------------------------------------------

ENVIRONMENTAL PROTECTION AGENCY

[AD-FRL-5993-7]

Agency Information Collection Activities: Proposed Collection;
Comment Request; Electric Utility Steam Generating Unit Mercury
Emissions Collection Effort

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

-----------------------------------------------------------------------

SUMMARY: In compliance with the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), this document announces that EPA is planning to submit the following proposed Information Collection Request (ICR) to the Office of Management and Budget (OMB): Electric Utility Steam Generating Unit Mercury Emissions Information Collection Effort Information Collection Request; EPA ICR No. 1858.01. Before submitting the ICR to OMB for review and approval, EPA is soliciting comments on specific aspects of the proposed information collection as described below.

DATES: Comments must be submitted on of before June 8, 1998.

ADDRESSES:Comments. Comments should be submitted (in duplicate, if possible) to: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (6102), Attention Docket No. A-92-55, Room M-1500, 401 M Street, S.W., Washington, D.C. 20460. The EPA requests that a separate copy also be sent to Mr. William Maxwell, Combustion Group (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

Copies of ICR

The draft ICR and other relevant materials, including the draft supporting statement, are available from the docket at the above address in Room M-1500, Waterside Mall (ground floor), phone number (202) 260-7548. A reasonable fee may be charged for copying. The docket is open for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, except for Federal holidays. Copies of the draft ICR may also be obtained free of charge from the EPA's website listing Federal Register Notices at ``http://www.epa.gov/ttn/oarpg/t3pfpr.html'' or by contacting one of the people listed below.

Public Meeting

The EPA plans to hold a public meeting in Washington, D.C., at which time interested parties can provide comment on this ICR. A document will be published in the near future in the Federal Register announcing the date, time, and location of this meeting.

FOR FURTHER INFORMATION CONTACT: For information concerning specific aspects of this ICR, contact Mr. William Maxwell [telephone number (919) 541-5430; facsimile number (919) 541-5450; e-mail ``maxwell.bill@epa.gov''], Combustion Group, Emission Standards Division (MD-13); or Mr. William Grimley [telephone number (919) 541-1065; facsimile number (919) 541-1039; e-mail ``grimley.william@epa.gov''], Emission Measurement Center,

[[Page 17407]]

Emission Monitoring and Analysis Division (MD-19), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION:

Affected entities: Entities potentially affected by this action are owners and operators of coal-fired electric utility steam generating units as defined by section 112(a)(8) of the Clean Air Act, as amended (the Act).

Title: Electric Utility Steam Generating Unit Mercury Emissions Information Collection Effort Information Collection Request; EPA ICR No. 1858.01.

Abstract: Section 112(n)(1)(A) of the Act requires EPA to perform a study of the hazards to public health reasonably anticipated to occur as a result of emissions by electric utility steam generating units of hazardous air pollutants (HAPs) after imposition of the requirements of the Act and to prepare a Report to Congress containing the results of the study. The Agency is to proceed with rulemaking activities under section 112 to control HAP emissions from utilities if EPA finds such regulation is appropriate and necessary after considering the results of the study. The study has been completed and the Final Report to Congress was issued on February 24, 1998.

In the Final Report to Congress, the EPA stated that mercury is the HAP emission of greatest potential concern from coal-fired utilities and that additional research and monitoring are merited. The EPA also listed a number of research needs related to such mercury emissions. These include obtaining additional data on the mercury content of various types of coal as burned in electric utility steam generating units and additional data on mercury emissions to the atmosphere (e.g., how much is emitted from various types of units; how much is divalent vs. elemental mercury; and how do factors such as control device, fuel type, and plant configuration affect emissions and speciation).

As indicated above, section 112(n)(1)(A) of the Act requires the Administrator to regulate electric utility steam generating units under section 112 if the Administrator finds that such regulation is appropriate and necessary after ``considering the results of the study'' noted above. The Administrator interprets the quoted language as indicating that the results of the study are to play a principle, but not exclusive, role in informing the Administrator's decision as to whether it is appropriate and necessary to regulate electric utility steam generating units under section 112. The Administrator believes that in addition to considering the results of the study, she may consider any other available information in making her decision. The Administrator also believes that she is authorized to collect and evaluate any additional information which may be necessary to make an informed decision.

After carefully considering the Final Report to Congress, the Administrator has concluded that obtaining additional information under the authority of section 114 of the Act prior to making the required determination is appropriate. In the Final Report to Congress, the EPA stated that at this time, the available information, on balance, indicates that utility mercury emissions are of sufficient potential concern for public health to merit further research and monitoring. The EPA acknowledged that there are substantial uncertainties that make it difficult to quantify the magnitude of the risks due to utility mercury emissions, and that further research and/or evaluation would be needed to reduce those uncertainties. The EPA believes that among those uncertainties are: (i) the actual cumulative amount of mercury being emitted by all electric utility steam generating units on an annual basis; (ii) the speciation of the mercury which is being emitted; and, (iii) the effectiveness of various control technologies in reducing the volume of each form of mercury which is emitted.

To address the question of the cumulative amount of mercury potentially being emitted by all electric utility steam generating units on an annual basis, the EPA believes that it is necessary to require the owners/operators of all such units to provide information on the mercury content of the coal burned in each unit as well as the volume of coal burned in each unit. Thus, the ICR includes a requirement for the owners/operators of all coal-fired electric utility steam generating units with a capacity greater than 25 megawatts electric (MWe) to periodically measure the mercury content of the coal which they burn on a weekly basis and report the results together with the corresponding volume of coal burned in each unit.

In preparing the Final Report to Congress, the Agency had available mercury emission data from a number of utility boilers. These data included measurements of the mercury emitted during various stages of the process (e.g., exiting the boiler, exiting the various control devices). Research conducted during the period between acquisition of these data and release of the report has highlighted the importance of the specific valence state of the emitted mercury on the ability of a particular control device to remove mercury from the exhaust gas stream. In addition, advances have been made in emission testing methodologies that more accurately differentiate among the various species of mercury that may be emitted from an electric utility steam generating unit. Thus, the ICR also includes provisions for acquiring additional speciated mercury data on both controlled and uncontrolled air emissions so that the relationship between mercury content and other characteristics of the coal, the species of mercury formed in the boiler, and the mercury removal performance of various control devices may be further evaluated.

Although the actual variables that affect mercury speciation are still being determined in ongoing research efforts, two variables that appear to have an effect are coal characteristics and scrubber type. For purposes of grouping the coal-fired units (boilers) into categories, these two variables were used so that a more representative sample of coal-fired units can be selected for testing. Coal characteristics are related to the coal type, which is defined as either bituminous (including anthracite for this ICR), subbituminous, or lignite. Scrubber type is defined as either a dry-scrubber (of any type/model), wet-scrubber (of any type/model), or no scrubber at all.

ICR Description: To address the issues related to coal characteristics, this ICR requires that the owner/operator of each facility at which one or more individual coal-fired unit(s) (boiler(s)) is (are) located (there are approximately 421 nationwide) provide periodic analyses of all coals fired. This would be accomplished by obtaining weekly as-fired coal analyses from each distinct coal storage pile, including silos, etc., in use at the facility, rather than from each boiler located at the facility. In this way, information will be provided from which the amount of mercury entering each of the approximately 1,017 coal-fired boilers (nationwide) may be estimated at a minimum burden level for any given facility. It would also be necessary to measure and record the amount of coal burned in each week and identify the source of the coal (e.g., State, seam, etc.). Each coal sample would be analyzed using one of several standardized analytical methods for mercury, chlorine, and other specified items. These analyses would be obtained either by direct sampling and analysis by each owner/operator or by submission of suitable analyses

[[Page 17408]]

provided by the coal supplier. Analyses performed by the coal supplier would not be considered suitable if the coal would subsequently be cleaned at the facility where the electric utility steam generating unit(s) is (are) located. The Agency will ultimately apply appropriate correction factors to these data to derive a reasonable estimate of the total amount of mercury emitted by each coal-fired electric utility steam generating unit on an annual basis. To better evaluate whether mercury emissions from coal-fired electric utility steam generating units vary over time and to provide information to the public on mercury emissions over time, the Agency is considering requiring coal sampling and emissions reporting to be conducted for a number of years.

To address the issues related to scrubber type, this ICR also requires that quarterly, triplicate simultaneous before/after control device stack sampling be performed by a subset of boilers using a specified mercury speciation method. During the stack testing, a statistically appropriate number of coal samples would be required to be collected for analysis. When dealing with a large population (approximately 1,017 individual boilers) of this nature with consideration being made for the cost of the data collection effort (which involves sampling the fewest number of units possible without compromising the integrity of the data being collected), a statistically representative sample is considered to be 30. These samples can be selected in one of two ways: equally among the viable categories or proportional allocation of sample to stratified population (units within each category). The universe of boilers was divided into nine scrubber type/coal characteristic categories. One possible category had no members, leaving eight viable categories. A proportional allocation methodology was selected, with provisions being made for having at least two members selected from each category (assessing one sample would provide no basis for comparison).

A random selection process will be used to determine what units are required to participate in this testing program. If possible, once a unit from a particular site (facility) has been selected, no other unit(s) at that site will be chosen for that particular category (i.e., some facilities have units with different scrubber types or that burn coal from different sources). This will provide the Agency with more information from a larger number of facilities. Appropriate quality assurance/quality control (QA/QC) procedures would be required for each part of the ICR.

Burden Statement: Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

The total annual reporting and recordkeeping burden for this ICR is estimated to be 40,516 hours and $14,659,264. This is the estimated burden for 421 facilities to provide coal analyses (assuming no more than two coal storage piles per facility) and 30 units to provide speciated mercury emission data. The average annual base reporting and recordkeeping burden and cost for this information collection for facilities having units subject only to the first component of the mercury emissions data gathering effort is 37 hours and $22,925. The average annual per electric utility steam generating unit base reporting and recordkeeping burden and cost for this information collection for units subject to the second component of the mercury emissions data gathering effort is 174 hours and $166,928. This ICR does not include any requirements that would cause the respondents to incur either capital and start-up costs or operation and maintenance costs. The EPA has assumed that all respondents will contract (i.e., purchase services) for the weekly coal analyses and for the quarterly stack testing. These costs are $8,804,800 for the coal analyses and $4,800,000 for the stack testing.

## Request for Comments

The EPA solicits comments on the following aspects of the ICR itself.

1. Will the information that the Agency proposes to collect have practical utility in informing the Administrator's decision on whether it is appropriate and necessary to regulate HAP emissions from electric utility steam generating units under section 112 of the Act?

2. Is the Agency's estimate of the burden of the proposed

collection of information, including the validity of the methodology and assumptions used, accurate?

3. Are there ways to enhance the quality, utility, and clarity of the information to be collected?

4. How can the Agency best minimize the burden of the collection of information on those who are to respond? Through the use of appropriate automated electronic, mechanical, or other technological collection techniques or other forms of information technology (e.g., permitting electronic submission of responses)?

The Agency also solicits comment on the following specific technical issues.

1. What is the exact amount, representativeness, and sufficiency of information on the mercury content of as-fired coal that already exists?

2. To what extent are analyses of mercury in as-fired coal currently being performed?

3. Do coal analyses performed on cleaned coal by coal suppliers accurately represent as-fired coal to the same degree as analyses of actual on-site samples?

4. What factors could increase or decrease the number of individual samples needed to identify with reasonable certainty an average annual mercury in coal value for a particular unit?

5. What is the minimum number of individual samples required for a particular unit to identify with reasonable certainty an average annual mercury in coal value?

6. Would a statistical sampling approach provide comprehensive data on the mercury content of the total volume of as-fired coal burned in electric utility steam generating units comparable in quality and reliability to that obtained by requiring the sampling of all such coals?

7. Could a particular facility be placed at a competitive disadvantage due to a disproportionate cost burden in either the coal or stack testing?

8. What is the specific amount, representativeness, and sufficiency of information on the speciation of mercury in stack gases that already exists or is currently being collected?

9. What difficulties in sampling at those sources selected for stack testing might occur due to unusual operating or physical characteristics?

10. Would requiring coal sampling and analyses for more than one year provide information that would be valuable to the public, as well as allow the Agency to better evaluate whether the characteristics of the as-fired coal burned in electric utility steam generating units vary over time and the impact of any such variation on mercury

emissions? The Agency seeks comment also on how best to design a mercury monitoring protocol beyond the first year.

Finally, the Agency requests comment on the following four general questions.

1. Are there other approaches to obtaining the desired information that the Agency could take which would provide data of comparable, or better, quality at a reduced burden?

2. Will the information which the Agency proposes to collect provide the Administrator with all of the information on the quantity and speciation of mercury emissions from electric utility steam generating units needed to determine whether it is appropriate and necessary to regulate HAP emissions from electric utility steam generating units under section 112 of the Act and to develop appropriate regulations if the Administrator determines that such regulation is appropriate and necessary?

3. Does the population of electric utility steam generating units from which the Agency proposes to obtain information (i.e., approximately 1,017 coal-fired boilers at approximately 421 facilities) adequately reflect the true population that meets the section 112(a)(8) definition (i.e., a population that may include publicly-owned utility companies, rural electric cooperatives, investor-owned utility generating companies, and non-utility generators)?

4. Is there any other information which the Agency should obtain to inform the Administrator's decision of whether it is appropriate and necessary to regulate HAP emissions from electric utility steam generating units under section 112 of the Act?

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information that is sent to ten or more persons unless it displays a currently valid OMB control number. The OMB control numbers for EPA's approved information collection requests are listed in 40 CFR part 9 and 48 CFR Chapter 15. This notice is the first step in obtaining approval for the ICR described above.

Dated: April 3, 1998.

Richard D. Wilson,

Acting Assistant Administrator, Office of Air and Radiation.

[FR Doc. 98-9390 Filed 4-8-98; 8:45 am]

BILLING CODE 6560-50-P

Attachment 3

Summary of Comments Received in Response to Proposed Information Collection
and Responses to those Comments

Attachment 4

Revised Questionnaire