U.S. Department of Energy
Energy Information Administration
FORM EIA-767 (1999)

FORM EIA-767
STEAM-ELECTRIC PLANT OPERATION AND DESIGN REPORT
1998

Form Approved
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2080-0018
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GENERAL INFORMATION

I. PURPOSE

Form EIA-767 collects information annually from all U.S. plants with a total existing or planned organic- or nuclear-fueled steam-electric generator nameplate rating of 10 megawatts or larger. This report is used for economic, regulatory, and environmental analyses conducted by the Department of Energy and the Environmental Protection Agency.

The data from this form are used in the **National Acid Precipitation Assessment Program**. The data are also used in the analysis of New Source Performance Standards and business pollution abatement activity, support of research and development programs regarding the improvement of power plant environmental performance, and in the estimation of emissions data for input to the EIA publication, *Electric Power Annual Volume II*.

II. WHO MUST SUBMIT

All electric utilities operating or planning to operate one or more plants in the United States where the total generator nameplate rating of the existing, under construction, or planned organic- or nuclear-fueled steam-electric units is 100 megawatts or larger must complete the entire form. Organic plants from 10 MW to less than 100 MW only complete pages 1, 5 (only boilers, generators, and FGD units, if applicable), 6, and, if applicable, 13 and 14. Nuclear plants complete only pages 1, 4, 5, 9, 10, and 11. Combined plants complete pages for nuclear and applicable pages for organic depending on capacity. For determining plant capacity, include waste-heat units with auxiliary firing. Do not include waste-heat units without auxiliary firing or auxiliary, house, or startup boilers. A separate Form EIA-767 must be submitted for each qualifying plant. **Planned equipment is defined, for reporting purposes, as equipment that is on order and expected to go into commercial service within 7 years.**

III. WHAT AND WHERE TO SUBMIT

Return the completed original form and one copy (retaining a copy for your files) to:

U.S. Department of Energy
Energy Information Administration, EI-53
Mail Stop BG-076 (Form EIA-767)
1000 Independence Avenue SW
Washington, DC 20077-5651

For assistance, contact the HELP CENTER: voice phone (202) 426-1697; or Mr. Stephen Scott at (202) 426-1149, fax phone (202) 426-1827, or E-mail, sscott@eia.doe.gov.

IV. WHEN TO SUBMIT

Submit the completed form no later than May 1 following the close of the reporting year.

V. SANCTIONS

The timely submission of Form EIA-767 by those required to report is mandatory under Section 13(b) of the Federal Energy Administration Act of 1974 (FEAA) (Public Law 93-275), as amended. Failure to respond may result in a civil penalty of not more than $2,500 for each violation, or a fine of not more than $5,000 for each willful violation. The government may bring a civil action to prohibit reporting violations which may result in a temporary restraining order or a preliminary or permanent injunction without bond. In such civil action, the court may also issue mandatory injunctions commanding any person to comply with these reporting requirements.

VI. PROVISIONS REGARDING CONFIDENTIALITY OF INFORMATION

The Office of Legal Counsel of the Department of Justice concluded on March 20, 1991, that the Federal Energy Administration Act requires the Energy Information Administration to provide company-specific data to the Department of Justice, or to any other Federal agency when requested for official use, which may include enforcement of Federal law. The information contained on this form may also be made available, upon request, to another component of the Department of Energy (DOE); to any Committee of Congress, the General Accounting Office, or other congressional agencies authorized by law to receive such information. A court of competent jurisdiction may obtain this information in response to an order.

The information contained on this form relating to boiler efficiency (Schedule III, page 8, item 8) and to planning data for new plants/equipment, equipment updates, retirement dates, (Schedule II through Schedule VIII) and projected fuel consumption (Schedule I, page 3) will be kept confidential and not disclosed to the public to the extent that it satisfies the criteria for exemption under the Freedom of Information Act (FOIA), 5 U.S.C. 552, the DOE Regulations, 10 C.F.R. 1004.11, implementing the FOIA, and the Trade Secrets Act, 18, U.S.C., 1905.

Upon receipt of a request for this information under the FOIA, the DOE shall make a final determination whether the information is exempt from disclosure in accordance with the procedures and criteria provided in the regulations. To assist us in this determination, respondents should demonstrate to the DOE that, for example, their information contains trade secrets or commercial or financial information whose release would be likely to cause substantial harm to their company's competitive position. A letter accompanying the submission that explains (on an element-by-element basis) the reasons why the information would be likely to cause the respondent substantial competitive harm if released to the public would aid in this determination. A new justification does not need to be provided each time information is submitted on the form, if the company has previously submitted a justification for that information and the justification has not changed.

The data reported on the Form EIA-767 not specifically stated in this section as confidential are not considered to be confidential.

GENERAL INSTRUCTIONS

1. Verify all preprinted information; if incorrect, draw a line through the incorrect entry and provide the correct information. Do not use white-out. Provide any missing information. Please do not use pencil.

2. If a report is to be submitted for a plant that has not been assigned an EIA utility-plant code, call the DOE contact identified on page 1 of the form.

3. The form is designed for reporting at two levels: the plant level and the equipment level, i.e., generator, boiler, flue gas particulate collector, etc. Schedules I and II request information at the plant level. Schedules III through VIII request information at the equipment level. Schedule IX is for footnotes. Footnotes must be provided when requested in an instruction, or when additional explanation is requested. Information reported on this form that is inconsistent with other information filed with EIA should be explained in a footnote.

4. All actual and preprinted information provided on this form must be true and accurate. If the preprinted information is correct, check **"NO CHANGE"** at the bottom of the page. If the entire page is not applicable, check **"PAGE NOT APPLICABLE"** at the bottom of the page. If actual data are not available, enter estimated values. Do not put an "E" or any other annotation next to estimated values. If you cannot provide an estimate, enter **"EN"** for estimate not available.

5. Information provided on this form should be for the calendar year indicated in the upper left-hand corner of each page of the form. Design information should be current as of December 31st of the year indicated.

6. Information provided should be actual data to the extent possible. Quantitative information should be reported in nearest whole numbers (no decimal points) unless otherwise indicated. Do not use commas in numerical entries.

7. If more than one sheet is required to complete a section, identify individual sheets as sheet "1 of 3," "2 of 3," etc.

8. The name, title, address, and telephone number of a person to whom questions should be addressed concerning the submitted form must be provided. The person identified should be familiar with the form and have access to related source materials so that reported information can be verified, if required.

9. The form must be signed and dated by a company official who is responsible for the reported data. The certifying official and contact person may be the same person.

10. All design data should reflect the current or planned configuration of equipment.

11. Do not change the unit of measurement from that requested. Ensure the unit of measurement is correct. For example, if the actual cost is $14,586,625.43, and you are requested to report on the form in thousand dollars, then enter 14587.

12. Do not include instruction pages when returning the completed form.

13. If the plant or units are jointly owned, the plant operator must submit the report for the entire plant, not just for the percent owned.

14. If the plant is 100 MW or greater and qualifies for filing, the report must include all fossil-steam units in the plant, even if an individual generator is under 100 MW.

15. The data reported on this form must be consistent with the corresponding data reported on other Energy Information Administration forms, e.g., total annual steam-electric generation reported on page 9 of this form should equal the annual steam-electric generation reported on the Form EIA-759, "Monthly Power Plant Report," and maximum generator nameplate rating should be the same as the nameplate rating reported on Schedule III of Form EIA-860A, "Annual Electric Generator Report–Utility."

16. Resubmission of any portion of the form should be clearly marked as such.

SPECIFIC INSTRUCTIONS

PAGE 1

Item

1 The utility name provided should be the full legal name of the operator of the plant.

5,7 Information provided should be current as of December 31st of the year indicated.

8 The person identified as the contact person should be familiar with the form and have access to related source materials so that the reported information can be verified, if required.

9a, 9b 9c, 9d The form must be signed and dated by a company official who is responsible for the reported data. The certifying official and contact person may be the same person.

SCHEDULE I. SECTION A. (page 2) PLANT INFORMATION—ANNUAL BYPRODUCT DISPOSITION AND STEAM SALES

Item

1 **All** If no byproduct was produced, enter "NA" in column (a) for this item. If a byproduct is disposed of at no cost, enter the amount under the appropriate column (b, c, d, or f) and make a footnote entry on page 16 of the form stating that no money was exchanged for the quantity indicated. If there was a cost for disposal, make sure there is a corresponding entry on page 4, item 1 for collection and/or disposal costs. Costs for gypsum disposal (item 1d) should be reported on page 4, item 1c with a footnote entry on page 16. Entries on page 2, column (e) (Byproducts Sold) must be compatible with entries on page 4, item 3 (Byproduct Sales Revenue). If the byproduct was distributed in several different ways, for example, the byproduct was placed in a landfill and then later sold, report the end disposition of the byproduct and provide a footnote on page 16 explaining all previous dispositions.

2 Enter quantity of steam sold, exchanged, or transferred as accounting transactions. If no steam was sold, exchanged, or transferred, enter "NA" for this item.

SCHEDULE I. SECTION B. (page 3) PLANT INFORMATION—PROJECTED ANNUAL FUEL CONSUMPTION

Item

1,2 3,4 Coal includes anthracite, bituminous coal, subbituminous coal, and lignite. Petroleum includes all residual and distillate fuel oils, crude oil, and all other petroleum fuels, excluding petroleum coke. Gas includes natural gas, synthetic natural gas, liquefied natural gas, refinery gas, blast-furnace gas, liquefied petroleum gas and coke-oven gas. Gas data should be reported at 14.73 pounds per square inch absolute at 60 degrees Fahrenheit (^{o}F). Report petroleum coke as "Other" fuel on page 6, item 4, column (d).

4 If actual data are not available, provide an estimated value.

SCHEDULE I. SECTION C (page 4) PLANT INFORMATION -- FINANCIAL INFORMATION

Item

All **Report all entries in thousand dollars to the nearest whole number.**

1 O&M costs must be provided for both collection and disposal of the indicated byproducts. If the collection and disposal costs cannot be separated, place the total cost under collection (column (a)), place an "EN" (estimate not available) under disposal (column (b)), and a footnote on page 16 indicating that the costs cannot be separated. All O&M expenditures should exclude depreciation expense, cost of electricity consumed, and fuel differential expense (i.e., extra costs of cleaner, thus more expensive fuel). Include all contract and self-service pollution abatement O&M expenditures for each line item.

1a,1b Fly Ash and Bottom Ash expenditures cover all material and labor costs including equipment O&M costs (such as particulate collectors, conveyers, hoppers, etc.) associated with the collection and disposal of the byproducts.

SCHEDULE I. SECTION C (page 4) (CONTINUED)

Item

1c FGD expenditures cover all material and labor costs including equipment O&M costs associated with the collection and disposal of the byproduct. The total for page 4, item 1c, columns (a) and (b) (FGD collection and disposal costs) should be greater than or equal to the combination of all totals reported on page 13, item 8e (FGD O&M expenditures during the year).

1d Water Pollution Abatement expenditures cover all O&M costs for material/supplies and labor costs including equipment O&M (pumps, pipes, settling ponds, monitoring equipment, etc.), chemicals, and contracted disposal costs. Collection costs include any expenditures incurred once the water that is used at the plant is drawn from its source. Begin calculating expenditures at the point of the water intake. Disposal costs include any expenditures incurred once the water that is used at the plant is discharged. Begin calculating disposal expenditures at the water outlet (i.e., cooling costs).

1e Other Pollution Abatement O&M expenditures are those not allocated to one particular expenditure (e.g., expenditures to operate an environmental protection office or lab). Include expenditures charged to decommissioning and cleanup of nuclear reactors (hazardous waste), radiation and noise pollution. Include expenses for conducting environmental studies for expansion or reduction of operation. Exclude all expenses for health, safety, employee comfort (OSHA), environmental aesthetics, research and development, taxes, fines, permits, legal fees, super-fund taxes, and contributions. Define other pollution abatement(s) in footnote(s) on page 16.

2 Report all pollution abatement capital expenditures for **new** structures/equipment made during the reporting year regardless of the date they may become operational. Items 2a, 2b, 2c, and 2d should not be left blank. Enter "EN" if an estimate is not available, and "NA" if the item is not applicable. **Specify expenditures for these items in a footnote(s) on page 16.**

2a Report under Air Pollution Abatement **new** structures/equipment purchased to reduce, monitor, or eliminate airborne pollutants, including particulate matter (dust, smoke, fly ash, dirt, etc.), sulfur dioxides, nitrogen oxides (NO_x), carbon monoxide, hydrocarbons, odors, and other pollutants. Examples of air pollution abatement structures/equipment include flue gas particulate collectors, flue gas desulfurization units, continuous emissions monitoring equipment (CEMs) and nitrogen oxide control devices. **Specify new structures/equipment in a footnote on page 16.**

2b Report under Water Pollution Abatement **new** structures/equipment purchased to reduce, monitor, or eliminate waterborne pollutants, including chlorine, phosphates, acids, bases, hydrocarbons, sewage, and other pollutants. Examples include structures/equipment used to treat thermal pollution; cooling, boiler, and cooling tower blowdown water; coal pile runoff; and fly ash waste water. Water pollution abatement excludes expenditures for treatment of water prior to use at the plant. **Specify new structures/equipment in a footnote on page 16.**

2c Report under Solid/Contained Pollution Abatement **new** structures/equipment purchased to collect and dispose of objectional solids or contained liquids. Examples include purchases of storage facilities, trucks, etc., to collect, store and dispose of solid/contained waste. Include equipment used for handling solid/contained waste generated as a result of air and water pollution abatement. **Specify new structures/equipment in a footnote on page 16.**

2d Report under Other Pollution Abatement amortizable expenses and purchases of **new** structures/equipment when such purchases are not allocable to a particular unit or item. Examples include charges for amortizing expenses to decommission and clean up nuclear waste, for the purchases of facilities to control hazardous waste, radiation, and noise pollution. Exclude all equipment purchased for aesthetics purposes. **Specify new structures/equipment in a footnote on page 16.**

SCHEDULE I. SECTION C (page 4) (CONTINUED)

Item

3 If item 3 is not applicable, place an "NA" in item 3f only. Report under Byproduct Sales Revenue the revenue, if any, for each listed byproduct. Specify "other" revenue in a footnote on page 16. Entries must be compatible with the entries on page 2, column (e). If the revenue for a byproduct is less than $1000, leave the item blank and make a footnote entry on page 16. Revenue for gypsum should be reported on page 4, item 3d with a footnote entry on page 16. Report the total revenue for the sale of byproducts on line f. If the revenue reported was for the sale of stockpiled byproducts from previous years, make a footnote entry on page 16.

SCHEDULE II. (page 5)
PLANT CONFIGURATION

Item

All Identification information should be a code commonly used by plant management for that equipment (e.g., "2," "A101," "7B," etc.). Select a code for each piece of equipment and use it for that equipment throughout this form. The code should be a maximum of five characters long and should conform to codes reported for the same equipment (especially generators) on other EIA forms. Do not use blanks in the code. **Do not enter "NA" for those items which are not applicable. Organic plants under 100 MW should only complete items 1, 2, and if applicable, 5. Planned equipment that is on order and expected to go into commercial service within 7 years must be reported. Do not change pre-printed identification codes.**

1 Using each boiler as a starting point, complete the entire column under the boiler identification with the requested information on each piece of associated existing or planned equipment (e.g., generators, cooling systems, etc.). **Report waste-heat boilers with auxiliary firing. Do not report waste-heat boilers without auxiliary firing, or auxiliary, house, or startup boilers.** A waste-heat boiler is a boiler that receives all or a substantial portion of its energy input from the noncombustible exhaust gases of a separate fuel-burning process.

1,2,3 Nuclear units should only report Items 1, 2, and 3. In Item 1, the reactor identification code should include the letter "N" at the end of the code.

2,3,4, 5,6,7 If a piece of equipment (e.g., a generator or a cooling system) serves two or more boilers, repeat the identification information for that equipment under each appropriate boiler.

2 Do not report auxiliary, house, or emergency generators. Multiple generators operated as a single unit (e.g., cross compound and topping generators) should be reported as a group with one identification code.

3 A cooling system is an equipment system that provides water to the condensers and includes water intakes and outlets, cooling towers and ponds, pumps, and pipes. Identify a single plant cooling system, not separate systems, unless systems are physically separated, e.g., have separate water intake and outlet structures, and each system can be operated independently.

4 If a combination particulate collector is associated with a single boiler, identify the collectors as a single group. If the particulate collector also removes sulfur dioxide, identify the unit in Items 4 and 5 using the same identification code.

5 A flue gas desulfurization (FGD) unit, for reporting purposes, is considered to include all the trains (or modules) associated with a boiler. If the FGD unit also removes particulate matter, identify the unit in Items 4 and 5 using the same identification code.

6 A stack is a tall, vertical structure containing one or more flues used to discharge products of combustion to the atmosphere.

7 A flue is an enclosed passageway within a stack for directing products of combustion to the atmosphere. For stacks with multiple flues, report in one column all flues that serve the boiler identified in Item 1. Separate multiple entries with commas. If the stack has a single flue, use the stack identification for the flue identification.

SCHEDULE III. SECTION A. (page 6)
BOILER INFORMATION — FUEL CONSUMPTION AND QUALITY

Item

1 Complete a separate page for each existing or planned boiler. If a plant uses fuel for reheaters or other fuel combustion devices where the exhaust gases exit the same stack as a main boiler(s), then report this separate fuel consumption under a fictitious (proxy) boiler(s). Report a fictitious (proxy) boiler for each stack that the exhaust gases exit. These boilers are to be identified as FB1, FB2, etc. Complete page 6 for each fictitious (proxy) boiler and an entry on page 5 showing the boiler(s) and the stack(s) used.

2 Select from the following equipment status codes:

- CN . . . . . Cancelled (previously reported as "planned")
- CO . . . . . New unit under construction
- OP . . . . . Operating (in commercial service or out of service less than 365 days)
- OS . . . . . Out of service (365 days or longer)
- PL . . . . . Planned (on order and expected to go into commercial service within 7 years)
- RE . . . . . Retired (no longer in service and not expected to be returned to service)
- SB . . . . . Standby (or inactive reserve, i.e., not normally used, but available for service)
- SC . . . . . Cold Standby (Reserve); deactivated. Usually requires 3 to 6 months to reactivate.
- TS . . . . . Operating under test conditions (not in commercial service)

3 Hours under load are hours the boiler has operated to drive the generator producing electricity.

4, col a, b & c, 5 See Definitions for a description of fuels. If no fuel was consumed, leave these items blank ("NA" not required). **Report fuel consumption and fuel quality in the proper units as requested on the form.**

4, col a A short ton equals 2000 pounds.

4, col b A barrel equals 42 U.S. gallons.

4, col c mmcf = million cubic feet, mcf = thousand cubic feet

4, col d Select one from the following fuel codes for other fuels:

- BFG . . . . . Blast furnace gas in million cubic feet (Btu per cubic foot)
- COM . . . . Coal-oil mixture in thousand barrels (Btu per gallon)
- FO2 . . . . #2 oil in thousand barrels (Btu per gallon)
- MTH . . . . Methanol in thousand barrels (Btu per gallon)
- PC . . . . . Petroleum coke in thousand short tons (Btu per short ton)
- PRO . . . . Propane in thousand barrels (Btu per gallon)
- REF . . . . . Refuse, bagasse, and all other nonwood waste in thousand short tons, bone-dry basis (Btu per short ton)
- WD . . . . Wood and wood waste in thousand short tons (Btu per short ton)

If any of the following codes are selected, specify other fuel in a footnote on page 16 of the form.

- OTG . . . . Other - Gas in million cubic feet (Btu per cubic foot)
- OTL . . . . Other - Liquid in thousand barrels (Btu per gallon)
- OTS . . . . . Other - Solid in thousand tons (Btu per pound)
- OT . . . . . Other (specify fuel and unit of measurement in a footnote on page 16 of the form)

4, col d, 5, col g If there is more than one "Other" fuel, report additional fuels in a footnote on page 16 of the form.

5, col a, d, f, & g Enter the average heat content of the fuels burned in Btu. The heat content of the fuel should be reported as the gross or higher heating value (rather than the net or lower heating value). The higher heating value exceeds the lower heating value by the latent heat of vaporization of the water. The heating value of fuels generally used and reported in a fuel analysis, unless otherwise specified, is the higher heating value. If the fuel heat content cannot be reported "as burned," data may be obtained from the fuel supplier on an "as received" basis. If this is the case, indicate in a footnote on page 16 that the fuel heat content data is "as received."

SCHEDULE III. SECTION A. (page 6) (CONTINUED)

Item

5 col b, c & e Report content to nearest 0.01 percent.

6 Enter the annual average nitrogen content of the coal burned to the nearest 0.1 percent. It may be obtained from analysis, coal contract, coal supplier, or best estimate. For continuous emissions monitoring, enter "CM" and give NO_x average in a footnote (page 16 of form). Otherwise, enter "EN" representing that an estimate is not available, or "NA" if coal was not burned for the indicated boiler.

7 Enter the annual average fixed carbon content of the coal burned to the nearest 0.1 percent. Data may be obtained from analysis, coal contract, coal supplier, or best estimate. For continuous emissions monitoring units, enter "CM" and give C average in a footnote (page 16 of form). Otherwise, enter "EN" representing that an estimate is not available, or "NA" if coal was not burned for the indicated boiler.

SCHEDULE III. SECTION B. (page 7)
BOILER INFORMATION -- AIR EMISSION STANDARDS

Item

2 Report the fuel that the boiler is expected to burn as a primary fuel next year. The fuel selected should be the fuel that will be considered for future air quality control purposes. See Definitions for a description of fuels. Specify "Other" in a footnote on page 16 of the form.

3a Select from the following the most stringent type of statute or regulation code:

FD . . . . . Federal ST . . . . . State LO . . . . . Local

If there is no standard for nitrogen oxide emissions, report "NA" for item 3a, column c and skip the remaining column c items.

3b "Emission Standard Specified" refers to the numeric value for the unit of measurement in item 3c. If no numeric value is specified, report "NA". For SO_2 (column b), if the standard requires both an emission rate and a percent scrubbed, report both standards separated by a slash, e.g., 1.2/90 for emission standards specified in item 3b column b and DP/SR for units of measurement in item 3c column b.

3c, col a Select from the following unit of measurement codes:

OP . . . . Percent of opacity
PB * . . . . Pounds of particulate matter per million Btu in fuel
PC . . . . Grains of particulate matter per standard cubic foot of stack gas
PG . . . . Pounds of particulate matter per thousand pounds of stack gas
PH . . . . Pounds of particulate matter emitted per hour
UG . . . . Micrograms of particulate matter per cubic meter
OT . . . . Other (specify in a footnote on page 16 of the form)

*PB is the preferred measurement.

3c, col b Select from the following unit of measurement codes:

DC . . . . Ambient air quality concentration of sulfur dioxide (parts per million)
DH . . . . Pounds of sulfur dioxide emitted per hour
DL . . . . Annual sulfur dioxide emission level less than a level in a previous year
DM . . . . Parts per million of sulfur dioxide in stack gas
DP * . . . . Pounds of sulfur dioxide per million Btu in fuel
SB . . . . Pounds of sulfur per million Btu in fuel
SR . . . . Percent sulfur removal efficiency (by weight)
SU . . . . Percent of sulfur content of fuel (by weight)
OT . . . . Other (specify in a footnote on page 16 of the form)

*DP is the preferred measurement.

3c, col c Select from the following unit of measurement codes:

NH . . . . Pounds of nitrogen oxides emitted per hour

SCHEDULE III. SECTION B. (page 7) (CONTINUED)

Item

3c, col c

NL . . . . . Annual nitrogen oxides emission level less than a level in a previous year
NM . . . . Parts per million of nitrogen oxides in stack gas
NO . . . . . Ambient air quality concentration of nitrogen oxides (parts per million)
NP * . . . . . Pounds of nitrogen oxides per million Btu in fuel
OT . . . . . Other (specify in a footnote on page 16 of the form)
* NP is the preferred measurement.

3d, col a b & c

Select from the following codes to indicate the period over which measurements are to be averaged:

NV	Never to exceed	WA	Weekly average
FM	5 minutes	MO	30 days
SM	6 minutes	ND	90 days
FT	15 minutes	YR	Annual
OH	l hour	PS	Periodic stack testing
WO	2 hours		
TH	3 hours	DT	Defined by testing
EH	8 hours		
DA	24 hours	NS	Not specified
OT	Other (specify in a footnote on page 16 of the form)		

3e, col a b & c

If the boiler is currently in compliance, report: (1) the year the boiler came into compliance or (2) the year of the regulation, whichever came last. Report "9999" only if: (1) a revision of a governing regulation is being sought or (2) no plans have been approved to bring the boiler into compliance.

3f, col a & b

Select from the following strategy for compliance codes; separate multiple entries (up to three) with commas:

CW . . .	Coal washing	SI	Seeking revision of State Implementation Plan or governing regulation
DB	Derate boiler		
IF	Install flue gas desulfurization unit		
MS	Currently meeting standard regulation	SS	Switch to lower sulfur fuel
RB	Retire boiler	UF	Upgrade flue gas desulfurization unit or process
RP	Replace particulate collectors		
SA	Switch to lower ash fuel	UP	Upgrade particulate collectors
OT	Other (specify in a footnote on page 16 of the form)		

3f, col c

Select from the following strategy for compliance codes; separate multiple entries (up to three) with commas:

BO	Burner out of service	MS . . .	Currently meeting standard
FR	Flue gas recirculation	NC	No plans to control
		OV . . .	Overfire air
LA	Low excess air	SE	Seeking revision of governing regulation
LN . . .	Low nitrogen oxide burner		
OT	Other (specify in a footnote on page 16 of the form)		

3g

Select the codes for the compliance strategy (separate multiple entries (up to three) with commas) from the following:

WA . . . . Allocated allowances and/or purchase allowances
CU . . . . . Control unit under Phase I extension plan
TU . . . . . Transfer unit under Phase I extension plan
UC . . . . . Decrease utilization - designate Phase II unit(s) as compensating unit(s)
US . . . . . Decrease utilization - designate sulfur-free generator(s) to compensate
UE . . . . . Decrease utilization - rely on energy conservation and/or improved unit efficiency
UP . . . . . Decrease utilization - purchase power
SU . . . . . Designate Phase II unit(s) as substitution unit(s)
IF . . . . . Install flue gas desulfurization unit (other than under Phase I extension plan)
SS . . . . . Switch to lower sulfur fuel
RP . . . . . Repower unit
ND . . . . . Not determined at this time
NC . . . . . No change in historic operation of unit anticipated
OT . . . . . Other (specify in a footnote on page 16 of the form)

SCHEDULE III. SECTION B. (page 7) (CONTINUED)

Item

4 New Source Performance Standards (NSPS) Subpart D are the standards for fossil-fuel-fired steam boilers for which construction began after August 17, 1971. NSPS Subpart Da are the standards for fossil-fuel-fired steam boilers for which construction began after September 18, 1978. The standards are described in the U.S. Environmental Protection Agency regulation under 40 CFR 60 Ch. 1 (7-1-85 Edition).

SCHEDULE III. SECTION C. (page 8)
BOILER INFORMATION - DESIGN PARAMETERS

Item

2 a & b Month-year date should be entered as follows: August 1959 as 8-59, NOT as 8/59 or 8/1/59 or 8-1959. If the month is unknown, enter a 6 before the year representing June.

4 For waste-heat boilers with auxiliary firing, complete Item 4 for auxiliary firing and Item 5 for waste heat. A waste-heat boiler is a boiler that receives all or a substantial portion of its energy input from the noncombustible exhaust gases of a separate fuel-burning process. Do not enter firing rate for a fuel that is used just for start-up or flame stabilization. Only enter data for primary or alternate fuels as entered in Items 6 and 13.

4b A barrel equals 42 U.S. gallons.

5 See Definitions for a description of waste-heat boiler.

6, 13 See Definitions for a description of fuels. Show design firing rates in Item 4. Do not include start-up fuels. Predominance is based on Btu.

7 Select from the following firing codes; separate multiple entries (up to three) with commas:

AF	Arch firing	RF	Rear firing
CF	Concentric firing	SF	Side firing
CY	Cyclone firing	SS	Spreader stoker
DB	Duct burner	TF	Tangential firing
FB	Fluidized bed firing	VF	Vertical firing (burners mounted on furnace ceiling)
FF	Front firing		
OF	Opposed firing		
OT	Other (specify in a footnote on page 16 of the form)		

9 Report at standard temperature and pressure, i.e., 68°F and 1 atmosphere pressure.

11 Dry bottom - no slag tanks at furnace throat area. Throat area is clear. Bottom ash drops through throat to bottom ash water hoppers. Design used where ash melting temperature is greater than the temperature on the furnace wall allowing for relatively dry furnace wall conditions. Wet bottom - slag tanks are installed at furnace throat to contain and remove molten ash from the furnace.

13 a,b, & c See Definitions for a description of alternate fuel.

13a Select from the following alternate fuel codes; separate multiple entries (up to three) with commas:

COL	Coal	GAS . . .	Gas
PET	Petroleum	NA	Not Applicable
OT	Other (specify in a footnote on page 16 of the form)		

If answer is "NA," skip to Item 14. See Definitions for a description of fuels.

13b Enter latest year any alternate fuel was burned.

13c The number of days reported should be the number of days required to refurbish, repair, or replace equipment necessary to burn any alternate fuel. Assume no environmental restrictions.

14a Select from the following low NOx control processes; separate multiple entries (up to three) with commas:

AA . . . . . Advanced Overfire Air
BF . . . . . Biased Firing (alternate burners)

SCHEDULE III. SECTION C. (page 8) (CONTINUED)

Item

14a

CF	Fluidized Bed Combustor (specify in a footnote on page 16 of the form)	SC	Slagging
FR	Flue Gas Recirculation	SN	Selective Noncatalytic Reduction
FU	Fuel Reburning	SR	Selective Catalytic Reduction
LA	Low Excess Air	OT	Other (specify in a footnote on page 16 of the form)
LN	Low NOx Burner		
NA	Not Applicable		
OV	Overfire Air		

14b Select from the following manufacturer of low NOx burner codes:

BW	Babcock and Wilcox	FW	Foster Wheeler
CE	Combustion Engineering	NA	Not Applicable
CO	Coem	PB	Peabody
EA	Eagle Air	RS	Riley Stoker
FN	Forney	OT	Other (specify in a footnote on page 16 of the form)

15 Select one code from the following boiler manufacturers' codes:

BW	Babcock and Wilcox	RS	Riley Stoker
CE	Combustion Engineering	VO	Vogt Machine Co.
ER	Erie City Iron Works	WE	Westinghouse
FW	Foster	OT	Other (specify in a footnote on page 16 of the form.

SCHEDULE IV. (page 9)
GENERATOR INFORMATION

Item

1 Complete for each existing, under construction, or planned generator. The identification must be the same as on page 5, item 2.

2 Report maximum generator nameplate rating in kilowatts. If the nameplate rating is expressed in kilovoltamperes, convert to kilowatts by multiplying the power factor by the kilovoltamperes. If more than one rating appears on the nameplate, select the highest rating. **Do not indicate the nameplate rating of the turbine.**

3a, b Data reported for both items should be under the same operating conditions.

3a If more than one condenser serves the generator, report the total flow rate for all the condensers.

3b If more than one condenser serves the generator, report the weighted average (by flow rate) temperature rise for all the condensers.

4 Net generation is the total amount of electric energy generated, measured at the generator terminals, less the total electric energy consumed at the generating station. If the monthly service load exceeded monthly gross electrical generation, report negative electrical generation with a minus sign. **Do not use parentheses. Report in kilowatthours only**. If no generation occurred, place a zero (0) in item 4m only.

SCHEDULE V. SECTION A. (page 10)
COOLING SYSTEM INFORMATION -- ANNUAL OPERATIONS

Item

2 Select from the following equipment status codes:

CN	Cancelled (previously reported as "planned")
CO	New unit under construction
OP	Operating (in commercial service or out of service less than 365 days)
OS	Out of service (365 days or longer)
PL	Planned (on order and expected to go into commercial service within 7 years)
RE	Retired (no longer in service and not expected to be returned to service)

SCHEDULE V. SECTION A. (page 10) (CONTINUED)

Item

2 SB . . . . Standby (or inactive reserve, i.e., not normally used, but available for service)
SC . . . . Cold Standby (Reserve); deactivated. Usually requires 3 to 6 months to reactivate.
TS . . . . . Operating under test conditions (not in commercial service)

If the code selected is "OP," complete Items 3 through 7; otherwise do not complete these items.

3a, 3b, 3c If the Average Annual Rate of Cooling Water is known for the entire plant but not for each cooling system, enter the information in column (a), enter "EN" in the rest of the columns as necessary, and indicate that the information is for the entire plant in a footnote on page 16.

3b If the system is a closed, zero discharge system, report "0", complete Items 3c and 4, but skip Item 5.

4, 5 "Peak Load Month" refers to the month of greatest plant electrical generation during the winter heating season (Oct-Mar) and summer cooling season (Apr-Sept), respectively. **Report temperature to the nearest whole number.**

6 Amount of chlorine pertains solely to elemental chlorine. If a compound is used, determine the amount of chlorine in compound. If the amount of chlorine added to the cooling water is known for the entire plant but not for each cooling system, enter the information in column (a), enter "EN" in the rest of the columns as necessary, and indicate that the information is for the entire plant in a footnote on page 16. **Report amount of chlorine to the nearest whole number.**

7 Select from the following chlorine discharge strategy codes; separate multiple entries with commas:
BS . . . . Blowdown shutoff during chlorination
CA . . . . Use alternate biocides
CD . . . . . Dechlorinate cooling water
CM . . . . . Minimize chlorine use (if chlorine used)
CN . . . . . No standard for chlorine discharge
CS . . . . . Controls not required to meet chlorine discharge standard
NC . . . . . No chlorine used
NP . . . . . NPDES license
SH . . . . . Liquid sodium hypochlorite
SS . . . . . Sun screens
ZD . . . . . Zero discharge
OT . . . . . Other (specify in a footnote on page 16 of the form)

SCHEDULE V. SECTION B. (page 11)
COOLING SYSTEM INFORMATION -- DESIGN PARAMETERS

Item

3 Select from the following cooling system codes; separate multiple entries (up to four) with commas:
OC . . . . . Once through with cooling pond(s) or canal(s)
OF . . . . . Once through, fresh water
OS . . . . . Once through, saline water
RC . . . . . Recirculating with cooling pond(s) or canal(s)
RF . . . . . Recirculating with forced draft cooling tower(s)
RI . . . . . Recirculating with induced draft cooling tower(s)
RN . . . . . Recirculating with natural draft cooling tower(s)
OT . . . . . Other (specify in a footnote on page 16 of the form)

4, 6 If more than one source of water is used by a cooling system, enter other sources on page 16 of the form (footnotes). If water is purchased, report "municipal." If water is from wells, report "wells." If source of water is "municipal" or "wells," skip to Item 6 and provide the total amount of water used at 100 percent load. Give the name of river, lake, etc.

5 If the cooling system is a zero discharge type (RC, RF, RI, RN), do not complete column b. The intake and the outlet are the points where the cooling system meets the source of cooling water (Item 4).

SCHEDULE V. SECTION B. (page 11) (CONTINUED)

Item

7 A cooling pond is a natural or man-made body of water that is used for dissipating waste heat from power plants.

8b Select from the following cooling tower codes; separate multiple entries (up to two) with commas:

MW . . . . Mechanical draft, wet process
MD . . . . Mechanical draft, dry process
NW . . . . . Natural draft, wet process
ND . . . Natural draft, dry process
WD . . . Combination wet & dry processes

10 Report the actual installed cost for the existing system or the anticipated cost to bring a planned system into commercial operation. Installed cost should include the cost of all major modifications.

A major modification is any physical change which results in a change in the amount of air or water pollutants or which results in a different pollutant being emitted.

10a Total system cost should include amounts for items such as pumps, piping, canals, ducts, intake and outlet structures, dams and dikes, reservoirs, cooling towers, and appurtenant equipment. The cost of condensers should not be included.

SCHEDULE VI. (page 12)
FLUE GAS PARTICULATE COLLECTOR INFORMATION

Item

2 Select from the following equipment status codes:

CN . . . . . Cancelled (previously reported as "planned")
CO . . . . . New unit under construction
OP . . . . . Operating (in commercial service or out of service less than . . . . . 365 days)
OS . . . . . Out of service (365 days or longer)
PL . . . . . Planned (on order and expected to go into commercial service within 7 years)
RE . . . . . Retired (no longer in service and not expected to be returned to service)
SB . . . . . Standby (or inactive reserve, i.e., not normally used, but available for service)
SC . . . . . Cold Standby (Reserve); deactivated. Usually requires 3 to 6 months to reactivate.
TS . . . . . Operating under test conditions (not in commercial service)

If the code selected is "OP," complete items 3 through 15. If any other code is selected, complete items 7 through 15 only.

3 If the collector has a combination of components (i.e., a baghouse and an electrostatic precipitator) report both components as one unit in one column. If the particulate collector also removes sulfur dioxide, report the particulate scrubbing process in this section and the desulfurization process on page 13 (flue gas desulfurization unit information).

3a Report removal efficiency based on the annual operating factor. Annual operating factor is defined as annual fuel consumption divided by the product of design firing rate and hours of operation per year. If actual data are unavailable, report estimates based on equipment design performance specifications.

3b If the test was conducted, but not at 100% load, report the efficiency on page 12 and report the load at which the test was conducted on page 16 (footnotes).

5 Report the particulate emission rate based on the annual operating factor.

8 Select from the following flue gas particulate collector codes; for combination units, separate multiple entries (up to three) with commas:

SC . . . . . Single cyclone

SCHEDULE VI. (page 12) (CONTINUED)

Item

8
- MC . . . Multiple cyclone
- BR . . . . Baghouse, reverse air
- BS . . . . Baghouse, shake and deflate
- BP . . . . Baghouse, pulse
- EC . . . . Electrostatic precipitator, cold side, with flue gas conditioning
- EH . . . . Electrostatic precipitator, hot side, with flue gas conditioning
- EK . . . . Electrostatic precipitator, cold side, without flue gas conditioning
- EW . . . Electrostatic precipitator, hot side, without flue gas conditioning
- WS . . . Wet scrubber
- OT . . . . Other (specify in a footnote on page 16 of the form)

9, 10 See Definitions for a description of fuels. Report range of values, if applicable.

15 Report the actual installed cost for the existing system or the anticipated cost to bring a planned system into commercial operation. Installed cost should include the cost of all major modifications. A major modification is any physical change which results in a change in the amount of air or water pollutants or which results in a different pollutant being emitted.

SCHEDULE VII. SECTION A. (page 13)
FLUE GAS DESULFURIZATION (FGD) UNIT INFORMATION - ANNUAL OPERATIONS

Item

2 Select from the following equipment status codes:
- CN . . . Cancelled (previously reported as "planned")
- CO . . . New unit under construction
- OP . . . Operating (in commercial service or out of service less than 365 days)
- OS . . . . . Out of service (365 days or longer)
- PL . . . . . Planned (on order and expected to go into commercial service within 7 years)
- RE . . . . . Retired (no longer in service and not expected to be returned to service)
- SB . . . . . Standby (or inactive reserve, i.e., not normally used, but available for service)
- SC . . . . . Cold Standby (Reserve); deactivated. Usually requires 3 to 6 months to reactivate.
- TS . . . . . Operating under test conditions (not in commercial service)

If the code selected is "OP," complete Items 3 through 8; otherwise, do not complete these items.

3 If the FGD unit also removes particulate matter, report the desulfurization process in this section and the particulate scrubbing process on page 12 of the form (particulate collector information).

3a Report removal efficiency based on the annual operating factor. Annual operating factor is defined as annual fuel consumption divided by the product of design firing rate and hours of operation per year. If actual data are unavailable, report estimates based on equipment design performance specifications.

3b If the test was conducted, but not at 100 percent load, report the efficiency on page 13 of the form, and report the load at which the test was conducted on page 16 (footnotes).

5 Report the total number of hours one or more trains were in operation; do not report for individual trains.

8 **Report expenditures to the nearest whole number.** FGD O&M expenditures should include the costs of continuous emissions monitoring, raw and byproduct material handling, limestone milling and storage, dewatering facilities, contracted labor and all other auxiliary FGD support facilities excluding depreciation expense and cost of electricity. These costs should also be included in Item 1c on page 4.

SCHEDULE VII. SECTION B. (page 14)
FLUE GAS DESULFURIZATION UNIT INFORMATION -- DESIGN PARAMETERS

Item

3 Select from the following FGD unit codes; for combination units, separate multiple entries (up to four) with commas:

BR . . . . Jet Bubbling Reactor
CD . . . . Circulating Dry Scrubber
MA . . . . Mechanically aided type
PA . . . . Packed type
SD . . . . Spray dryer type
SP . . . . . Spray type
TR . . . . . Tray type
VE . . . . . Venturi type

4 Select from the following sorbent codes; separate multiple entries (up to four) with commas:

AF . . . . . Alkaline fly ash
CC . . . . . Calcium carbide slurry
DB . . . . . Dibasic acid
DL . . . . . Dolomitic limestone
LA . . . . . Lime and alkaline fly ash
LF . . . . . Limestone and alkaline fly ash
OT . . . . . Other (specify in a footnote on page 16 of the form)
LI . . . . . Lime
LS . . . . . Limestone
MO . . . . Magnesium oxide
SA . . . . Soda ash
SC . . . . Sodium carbonate
SL . . . . Soda liquor
SS . . . . Sodium sulfite

6 Select one code from the following FGD manufacturer codes:

AM . . . . . American Air Filter
BW . . . . . Babcock and Wilcox
CC . . . . . Chemico
CE . . . . . Combustion Engineering
CO . . . . . Combustion Equipment
DM . . . . . Davey McKee
EE . . . . . Environmental Engineering
GE . . . . . General
JO . . . . Joy Manufacturing
KE . . . . M. W. Kellogg
KR . . . . Krebs Engineers
MI . . . . Mitsubishi Industry
PB . . . . Peabody
RC . . . . Research-Cottrell
FL . . . . . Flakt, Inc.
FM . . . . . FMC
UO . . . . . Universal Oil Products
RS . . . . Riley Stoker
TH . . . . Thyssen/CEA
OT . . . . . Other (specify in a footnote on page 16 of the form)

7 See Definitions for a description of coal.

12a Removal efficiency is to be reported as the percent by weight of gases removed from the flue gas.

12f Report the total liquid to total gas ratio for all stages.

14 Report the actual installed costs for the existing systems or the anticipated costs to bring a planned system into commercial operation.

Installed cost should include the cost of all major modifications. A major modification is any physical change which results in a change in the amount of air or water pollutants or which results in a different pollutant being emitted. The total will be the sum of items 14a and 14b and any other costs pertaining to the installation of the unit.

SCHEDULE VIII. (page 15)
STACK AND FLUE INFORMATION -- DESIGN PARAMETERS

Item

1,2 These items *must* have an entry. If there is only one flue, use the stack identification also as the flue identification. Identification codes must be the same as reported on page 5 of the form.

3 Select one from the following equipment status codes:

CN . . . . Cancelled (previously reported as "planned")
CO . . . . New unit under construction
OP . . . . Operating (in commercial service or out of service less than 365 days)
OS . . . . Out of service (365 days or longer)
PL . . . . . Planned (on order and expected to go into commercial service within 7 years)

SCHEDULE VIII. (page 15) (CONTINUED)

Item

3 RE . . . . Retired (no longer in service and not expected to be returned to service)
SB . . . . Standby (or inactive reserve, i.e., not normally used, but available for service)
SC . . . . Cold standby (Reserve); deactivated. Usually requires 3 to 6 months to reactivate.
TS . . . . . Operating under test conditions (not in commercial service)

8 Rate should be approximately equal to cross-sectional area multiplied by the velocity multiplied by 60.

SCHEDULE IX. (page 16) FOOTNOTES

Item

All The footnote reference can only refer to one page, one sheet, one item number and letter, and one column letter. If the footnote is the same for multiple references, indicate this in the comment section (e.g., This footnote also applies to Item 4b through 4l in columns (a) through (c)).If the comment exceeds one line, repeat the page, sheet, item, letter, and column identification. If "OT" is used instead of a specific code, please explain what it represents in the footnotes on page 16 of the form. Note preprinted text in comment section. **Do not white-out footnotes**. Show any changes to footnotes by drawing a line through the preprinted information. Do not hand write a preprinted footnote again as this could result in a duplicaton.

DEFINITIONS

Air Pollution Abatement Equipment - Equipment used to reduce, monitor, or eliminate airborne pollutants, including particulate matter (dust, smoke, fly ash, dirt, etc.), sulfur oxides, nitrogen oxides (NOx), carbon monoxide, hydrocarbons, odors, and other pollutants. Examples of air pollution abatement structures and equipment include flue gas particulate collectors, flue gas desulfurization units, continuous emissions monitoring equipment (CEMs) and nitrogen oxide control devices.

Alternate Fuel - Those fuels that the boiler is capable of burning but are not normally used.

Annual Operating Factor - The annual fuel consumption divided by the product of design firing rate and hours of operation per year.

Bottom Ash - Residue mainly from the coal burning process that falls to the bottom of the boiler for removal and disposal.

Coal - A black or brownish-black combustible substance formed by the partial decomposition of vegetable matter without access to air. The rank of coal, which includes anthracite, bituminous coal, subbituminous coal, and lignite, is based on fixed carbon, volatile matter, and heating value. Coal rank indicates the progressive alteration, or coalification, from lignite to anthracite. Lignite contains approximately 4500 to 8500 Btu per pound. The heat contents of subbituminous and bituminous coal range from 8000 to 12000 Btu per pound, and from 9500 to 15000 Btu per pound respectively. Anthracite contains approximately 11000 to 14000 Btu per pound.

Cooling Pond - A natural or man-made body of water that is used for dissipating waste heat from power plants.

Cooling System - An equipment system that provides water to the condensers and includes water intakes and outlets, cooling towers, and ponds, pumps, and pipes. Identify a single plant cooling system, not separate systems, unless systems are physically separated, e.g., have separate water intake and outlet structures, and each system can be operated independently.

Dry Bottom Boiler - No slag tanks at furnace throat area. The throat area is clear. Bottom ash drops through the throat to the bottom ash water hoppers. This design is used where the ash melting temperature is greater than the temperature on the furnace wall allowing for relatively dry furnace wall conditions.

Flue - An enclosed passageway within a stack for directing products of combustion to the atmosphere. There may be more than one flue in a stack.

Fly Ash - Particulate matter mainly from coal ash in which the particle diameter is less than 1×10^{-4} meter. This ash is removed from the flue gas using flue gas particulate collectors such as fabric filters and electrostatic precipitators.

Flue Gas Desulfurization Unit - An item of equipment that uses a wet or dry process for removing sulfur dioxide from flue gases before they are emitted into the atmosphere. Sorbent chemicals such as lime or limestone are used as the scrubbing media.

Flue Gas Particulate Collector - Equipment used to remove fly ash from the combustion gases of a boiler plant before discharge to the atmosphere. Particulate collectors include electrostatic precipitators, mechanical collectors (cyclones), fabric filters (baghouses), and wet scrubbers.

Gas - A non-solid, non-liquid combustible energy source that includes natural gas, coke-oven gas, blast-furnace gas, and refinery gas.

Gypsum - Calcium sulfate dihydrate ($CaS0_4 \cdot 2H_20$), a sludge constituent from the conventional lime scrubber process obtained as a byproduct of the dewatering operation and sold for commercial use.

Hours Under Load - The hours the boiler is operating to drive the generator producing electricity.

Load on Equipment - 100 percent load is the maximum continuous net output of the unit at normal operating conditions during the annual peak load month. For example, if the equipment is capable of operating at 5 percent overpressure continuously, use this condition for 100 percent load.

Net Generation - Gross generation, less plant use, measured at the high-voltage terminals of the station's step-up transformer.

Peak Load Month - The month of greatest plant electrical generation during the winter heating season (Oct-Mar) and summer cooling season (Apr-Sept), respectively.

Petroleum - Petroleum includes all residual and distillate fuel oils, crude oil and all other petroleum fuels, excluding petroleum coke. Report petroleum coke as "other" on page 6.

Sludge - Solid wastes from flue gas cleaning systems composed of sulfur salts of calcium together with varying amounts of calcium carbonate ($CaC0_3$) and unreacted lime (Ca0).

Stack - A tall, vertical structure containing one or more flues used to discharge products of combustion to the atmosphere.

Waste-Heat Boiler - A boiler that receives all or a substantial portion of its energy input from the noncombustible exhaust gases of a separate fuel-burning process.

Water Pollution Abatement Equipment - Equipment used to reduce, monitor, or eliminate waterborne pollutants, including chlorine, phosphates, acids, bases, hydrocarbons, sewage, and other pollutants. Examples of water pollution abatement structures and equipment include those used to treat thermal pollution; cooling, boiler, and cooling tower blowdown water; coal pile runoff; and fly ash waste water. Water pollution abatement excludes expenditures for treatment of water prior to use at the plant.

Wet Bottom Boiler - Slag tanks are installed usually at the furnace throat to contain and remove molten ash.