



EUCG

Your Energy Information Source

Data Definitions

EUCG Fossil Productivity Database

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Introduction

Use this guide when you enter the Fossil Productivity Database data entry forms. Follow the instructions when you enter data to ensure accuracy. With your help, other database participants will use this database to compare and analyze data with confidence. Remember that accurate definitions are vital to the success of the database. If you have any questions, report them to the Database Administrator.

Use this manual to fill in the fields of the database. The chapters in this manual correspond to the tabs in the database, and field headings within the database appear in **blue**. Any blue words are verbatim from the database.

Some text appears in notes formatted like this:

Note: This is a note!

Read these notes because they provide extra information on how to fill in fields and where to find information. You will save time if you read them.



Utility Log

Utility Code

Enter the four-character alphanumeric code assigned to your utility by the Database Administrator.

Note: The Database Administrator assigns the utility code when the utility becomes an EUCG Fossil Productivity Database participant. You will enter the utility code on all data entry workbook tabs. Contact the Database Administrator if you need to establish your utility code.

Utility

Enter the name of the utility. If applicable, enter the name filed with the Federal Energy Regulatory Commission (FERC).

Accounting Convention

Select (C) for data reported by calendar year. Select (F) for data reported by fiscal year.

Enter the contact information of the person in the participating utility who is responsible for reporting fossil data to the EUCG.

- **First Name**
- **Last Name**
- **Address Line 1**
- **Address Line 2**
- **City**
- **State**
- **ZIP/Postal Code**
- **Country**
- **Telephone**
- **Telephone Extension**
- **Email Address**



Plant Profile

Utility Code

Enter the four-character utility code created on the Respondent Information workbook tab.

Plant Code

Enter the four-character plant code. Use this plant code for data reported that is specific to this plant. Create the plant code by the following:

1. Use the last two characters of your utility code as the first two characters of your plant code.
2. Assign the plant a number 1–9. If you have more than 9 plants in your utility, use letters to represent numbers 10 and greater: “A” for plant 10, “B” for plant 11, and so on. The number or letter you have assigned the plant will be the third character in the plant code.
3. Enter the fourth character as the numeral “0,” which will always be the fourth character in the plant code.

Examples:

| | |
|-------------|--|
| 14AD | Utility code assigned by Database Administrator |
| AD60 | Plant code for a plant from utility 14AD. The first two characters in the plant code are the last two characters in the utility code. The third character represents the plant number, “6” in this case. The fourth character of a plant code is always the numeral “0.” |
| ADC0 | Plant code for a plant from utility 14AD. The character “C” represents the twelfth plant. The fourth character in the plant code is always the numeral “0.” |

Plant Name

Enter the name of the plant.

Note: If applicable, enter the name filed with the FERC.

Operating Utility

Enter the name of the utility responsible for operating the plant.

NERC Region

Select the acronym for the North American Energy Reliability Corporation (NERC) for the plant's reporting region.

- (FRCC) Florida Reliability Coordinating Council
- (MRO) Midwest Reliability Organization
- (NPCC) Northeast Power Coordinating Council
- (RFC) ReliabilityFirst Corporation
- (SERC) SERC Reliability Corporation
- (SPP) Southwest Power Pool, Inc.
- (TRE) Texas Regional Entity
- (WECC) Western Electricity Coordinating Council
- (N/A) Not Applicable

Units on Site

Enter the total number of fossil steam generating units on the site.

Unionized?

Select (Yes) if a union represents any plant employees. Select (No) if a union does not represent any plant employees.

Distance from City \geq 50k Population

Select one of the following to indicate how far the plant is from the nearest city with a population of 50,000 or more:

- (0–50 Miles)
- (50–100 Miles)
- (100+ Miles)

Joint Ownership?

Select (Yes) if another company or companies jointly own the plant. Select (No) if the plant is not.



Unit Profiles

Utility Code

Enter the four-character utility code created on the Respondent Information workbook tab.

Plant Code

Enter the four-character utility code created on the Plant Profile workbook tab.

Unit Code

Enter the four-character unit code. The unit code is similar to the plant code except the unit number replaces the fourth character in the plant code. As with plant numbers, assign the unit a number, 1–9. If the plant has more than 9 units, use letters to represent numbers 10 and greater: “A” for unit 10, “B” for unit 11, and so on. Make sure this number or character represents the actual number designated for this unit at the plant site. Use this code only when reporting unit-level data.

Examples:

| | |
|-------------|---|
| AD60 | Plant code. |
| AD62 | Unit code for unit 2 in plant with code given above. |
| AD6H | Unit code for unit 17 in plant with code given above. |

Unit Name

Enter the name of the unit.

In-Service Date (MM/YYYY)

Enter the month and year when the unit was first declared available for dispatch at some level of its capacity or when the unit first operated at 50% capacity (as specified on the generator name plate).

Note: For more information, refer to NERC-GADS Data Reporting Instructions, Appendix E1 – Unit Design Data Forms, Fossil Steam.

Generator Nameplate, MW

Enter the product of the megavoltamperes (MVA) and the rated power factor as stamped on the generator nameplate(s) of the unit.

Note: For more information, refer to NERC-GADS Data Reporting Instructions, Appendix E1 – Unit Design Data Forms, Fossil Steam.

Load Type (Design)

Select the code that best describes the operation for which the unit was originally designed.

- (B) Base load with minor load following
- (P) Periodic start-up, load follow daily, reduced load nightly
- (W) Weekly start-up, load follow daily, reduced load nightly
- (D) Daily start-up, load follow daily, off-line nightly
- (S) Start-up chiefly to meet daily peaks
- (O) Other

Note: For more information, refer to NERC-GADS Data Reporting Instructions, Appendix E1 – Unit Design Data Forms, Fossil Steam.

Reheat/ Non-Reheat

Select (R) if the unit is a reheat unit. Select (N) if the unit is not.

Primary Fuel Type

Select the code that represents the first choice of fuel (for economic or control reasons) or the fuel that contributes 50% or more of the load-carrying Btus.

- (CO) Coal
- (CM) Combination
- (GA) Natural Gas
- (LI) Lignite
- (OI) Oil
- (OT) Other
- (NO) None

Note: Do not enter information on ignition or warm-up fuel.

Secondary Fuel Type

Select the code that represents the secondary fuel used to sustain load if the primary fuel is unavailable or uneconomical.

- (CO) Coal
- (CM) Combination
- (GA) Natural Gas
- (LI) Lignite
- (OI) Oil
- (OT) Other
- (NO) None

Note: Do not enter information on ignition or warm-up fuel.

Boiler PO Interval, Major (Months)

Enter the period of scheduled time between any planned outages lasting longer than 16 days.

Note: In this section, specify the planned outage intervals for the boiler and turbines in the unit. A planned outage is an outage scheduled in advance, that lasts for a predetermined period of time, and occurs once or twice per year. Examples of planned outages are turbine and boiler overhauls, inspections, and tests.

Boiler PO Interval, Minor (Months)

Enter the period of scheduled time between any planned outages with a duration lasting 16 days or less.

Enter the period of scheduled time between planned maintenance outages for each of the major turbine-generator components listed below:

- **PO Interval, HP/IP Turbine (months)**
- **PO Interval, HP Turbine (months)**
- **PO Interval, IP Turbine (months)**
- **PO Interval, LP Turbine (months)**

Enter "N/A" if not applicable.

Boiler Manufacturer

Select the code that represents the name of the boiler manufacturer.

- (BW) Babcock & Wilcox
- (CE) Combustion Engineering
- (FW) Foster Wheeler
- (RS) Riley Stoker
- (OT) Other

Boiler Type

Select the code that represents the type of boiler at the unit.

- (C) Subcritical
- (S) Supercritical

Note: Subcritical boilers operate at pressures below 3207 psi. Supercritical boilers operate at pressures greater than 3207 psi.

Boiler Firing

Select the code that represents the type of fuel firing system for which the unit was designed.

- (WFS) Wall-mounted burners on front or back of furnace
- (OPP) Opposed wall-mounted burners on front and back
- (VER) Vertical
- (TAN) Tangential
- (CYC) Cyclone (single- or opposed-wall)
- (CON) Concentric
- (FLC) Circulating fluidized bed
- (FLB) Bubbling fluidized bed
- (STO) Stoker
- (OTH) Other

Note: For more information, refer to NERC-GADS Data Reporting Instructions, Appendix E1 – Unit Design Data Forms, Fossil Steam.

Boiler Capacity, lb/hr

Enter the steam flow rate (lb/hr) in the main steam lines at the full load and with valves open at design point.

Turbine Manufacturer

Select the code that best represents the steam turbine's casing or shaft arrangement manufacturer.

- (AC) Allis-Chalmers
- (AE) Associated Electric Industries
- (BB) Brown-Boveri
- (GE) General Electric
- (PA) C. A. Parsons & Company
- (UP) Utility Power Corporation
- (WH) Westinghouse
- (OT) Other

Turbine Type

Select the code that best represents the steam turbine's casing or shaft arrangement.

- (S) Single-casing: single (simple) turbine having one pressure casing (cylinder)
- (T) Tandem compound: two or more casings coupled together in line
- (C) Cross compound: two cross-connected single-casing or tandem compound turbine sets
- (R) Triple compound: three cross-connected single-casing or tandem compound turbine sets
- (O) Other

Select (Y) or (N) to indicate whether the above environmental equipment is a part of the unit in the following categories:

- **FGD System?**
- **SCR?**
- **Precipitator?**
- **Baghouse?**
- **CEM System?**
- **Low NOx Burners?**
- **Hg Removal: Activated Carbon?**
- **Hg Removal: Other Technology?**



Performance & Fuel Data

This section is due when you initially submit your data and annually thereafter.

Note: In this section you will enter either unit- or plant-level data. See **Appendix: Reporting Unit- and Plant-level Data** at the end of this document for more information.

Refer to the NERC-GADS data reporting instructions as noted below for reporting performance data.

FPDB Utility Code

Enter the four-character utility code created on the Respondent Information workbook tab.

FPDB Plant Code

Enter the four-character utility code created on the Plant Profile workbook tab.

FPDB Unit Code

Enter the four-character unit code. (For more information on unit codes see page 9.)

Report Year

Enter the year and the month the company records the data in these categories:

- **Year (4-digit)**
- **Month (0112)**

Gross Maximum Capacity

Unit-level Data

Enter the maximum capacity a unit can sustain over a specified period of time when not restricted by ambient conditions or deratings.

Note: For more information, refer to NERC-GADS Performance Report, Record 01, columns 16-19 (95 format) or columns 16-21 (03 format).

Plant-level Data

Add the gross maximum capacity of each active fossil unit on site. Enter the results in megawatts (MW).

Gross Dependable Capacity

Enter the gross power level that the unit can sustain during a given period without equipment, operation, or regulatory restrictions. The GDC is the GMC modified for ambient limitations.

Gross Actual Generation, MWH**Unit-level Data**

Enter the number of gross electrical megawatt-hours (MWH) generated during the report year.

Note: For more information, refer to NERC-GADS Performances Report, Record 01, columns 31-34 (95 format) or columns 37-42 (05 format).

Plant-level Data

Enter the sum of gross actual generation for each unit.

Net Maximum Capacity, MW**Unit-level Data**

Subtract any capacity used for the unit's station service or auxiliary load from the unit's gross maximum capacity. Enter the unit's gross maximum capacity into the database.

Note: Report this figure in megawatts. This figure must be less than the Gross Maximum Capacity.

Plant-level Data

Enter the sum of the net maximum capacity of each active fossil unit on site.

Note: For more information, refer to NERC-GADS Performances Report, Record 01, columns 31-34 (95 format) or columns 37-42 (05 format).

Net Dependable Capacity, MW**

The worksheet will calculate this figure if data are available.

Unit-level Data

Enter the result of the following formula (refer to NERC-GADS):

$$[NAG/PH*NMC] * 100 (\%)$$

Abbreviations: NAG is Net Actual Generation, MWH; PH is Period Hours; and NMC is Net Maximum Capacity, MW.

For more information, refer to NERC-GADS Data reporting Instructions, Appendix F-Performance Indices and Equations.

Plant-level Data

Enter "roll up" unit-level data by using plant-level figures in the formula stated above. Plant-level NAG is the sum of the NAG for each unit. Plant-level NMC is the sum of NMC for each unit. For PH, calculate composite hours from unit hours as a capacity-weighted average by using the following formula:

$$\frac{\Sigma (\text{Unit PH} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Net Actual Generation, MWH

Unit-level Data

Enter the gross generation less any generation (in MWH) used for station service or auxiliary loads during the report year.

Note: For more information, refer to NERC-GADS Performance Report, Record 01, columns 39-45 (95 format) or columns 49-58 (05 format).

Plant-level Data

Enter the sum of net actual generation for each unit. This figure must be less than Gross Actual Generation.

Attempted Starts and Actual (Successful) Starts

Unit-level Data

Enter the number of times personnel unsuccessfully attempted to start a unit in the column titled **Attempted Starts**. In the next column enter the number of times personnel successfully started a unit during the report year.

Note: For more information, refer to NERC-GADS Performance Report, Record 01, columns 50-52 (95 format) or columns 62-64 (05 format).

Plant-level Data

Enter the sum of the number of starts for each unit.

Load Type (Operation)

Select the code that represents the actual mode of unit operation during the report year.

- (B) Base load, minor load following at night and on weekends
- (P) Periodic start-up load follow daily-reduced load nightly
- (W) Weekly start-up, load follow daily, reduced load nightly
- (D) Daily start-up, load follows daily, off-line nightly
- (S) Start-up chiefly to meet daily peaks
- (L) Seasonal operations
- (O) Other
- Fill in **Verbal Description if Column N is "Other"**

Note: For more information, refer to NERC-GADS Performance Report, Record 01, column 46 (95 format) or column 58 (05 format).

Service Hours

Unit-level Data

Enter the total number of hours a unit connects electrically to the transmission system during the report year. For units equipped with multiple generators, count only those hours when at least one of the generators synchronizes, regardless of the number of generators in service.

Note: For more information, refer to NERC-GADS Performance Report, Record 01, columns 16-19 (95 format) or column 16-20 (05 format).

Plant-level Data

Use the following formula to find “roll up” unit-level data:

$$\frac{\Sigma (\text{Unit Service Hours} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Period Hours

Unit-level Data

Enter the number of hours a unit was active during the report year.

Note: For more information, refer to NERC-GADS Performance Report, Record 02, columns 56-59 (95 format) or column 66-70 (05 format).

Plant-level Data

Use the following formula to find “roll up” unit-level data:

$$\frac{\Sigma (\text{Unit Period Hours} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Note: Enter a figure that is greater than zero. A unit is interactive when it is “unavailable for service for an extended period of time for reasons not related to the equipment.” For the purpose of this database, a unit is interactive when it retires; mothballs; or is in interactive reserve. Refer to GADS Data reporting Instructions, Section III, Event reporting.

Reserve Shutdown Hours

Unit-level Data

Enter the sum of all hours during the report year that a unit was available, but not synchronized for economic reasons.

Note: For more information, refer to NERC-GADS Performance Report, Record 02, columns 20-23 (95 format) or column 21-23 (05 format).

Plant-level Data

Use the following formula to find “roll up” unit-level data:

$$\frac{\Sigma (\text{Unit Reserve Shutdown Hours} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Note: Reserve shutdown also refers to an “economy outage” or “economy shutdown.” If a unit is shut down due to any equipment-related problem, regardless of whether the system needs it or not, the system is not in reserve shutdown. Refer to GADS Data reporting Instructions, Section III, Event Reporting.

Planned Outage Hours

Unit-level Data

Enter the sum of all hours a unit was off-line due to Planned Outages (NERC-GADS cause code PO) and Planned Outage Extensions [NERC-GADS cause code PE (or SE of PO)] during the report year.

Plant-level Data

Use the following formula to find “roll up” unit level data:

$$\frac{\Sigma (\text{Unit Planned Outage Hours} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Forced Outage Hours

Unit-level Data

Enter the sum of all hours a unit was off-line due to immediate, delayed, and postponed outages (NERC-GADS cause codes U1, U2, U3) and startup failures (NERC-GADS Performance Report, Record 02, columns 40-43 (95 format) or columns 46-50 (05 format)).

Plant-level Data

Use the following formula to find “roll up” unit-level data:

$$\frac{\Sigma (\text{Unit Forced Outage Hours} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Note: Forced outage hours are the unplanned removal of a unit from service when the unit has a component failure, or when another outage state or reserve shutdown occurs.

Maintenance Outage Hours

Unit-level Data

Enter the sum of all hours a unit was off-line due to maintenance outages (NERC-GADS cause code MO) and maintenance outage extensions (NERC-GADS cause code ME (or SE of MO)] during the report year.

Plant-level Data

Use the following formula to find "roll up" unit-level data:

$$\frac{\Sigma (\text{Unit Maintenance Outage Hours} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Note: A maintenance outage is the removal of a unit from service if its specific components need repair before the next planned outage. A maintenance outage can occur anytime during the year, has a flexible start date, may or may not have a predetermined duration, and is usually much shorter than a planned outage.

Scheduled Outage Hours

Unit-level Data

Enter the result of the following formula (refer to NERC-GADS Data Reporting Instructions):

$$POH + MOH + (SE \text{ of } MO)$$

Abbreviations: POH is Planned Outage Hours, MOH is Maintenance Outage Hours, SE of PO is Scheduled Extensions of planned Outages, SE of MO is Scheduled Extensions of Maintenance Outages.

Plant-level Data

Use the following formula to find the "roll up" unit-level data:

$$\frac{\Sigma (\text{Unit SOH} * \text{Unit Net maximum Capacity})}{\Sigma \text{Unit net Maximum Capacity}}$$

Fuel No. 1: Type

Enter the fuel that made the greatest contribution to thermal generation during the report year for Fuel Number 1.

Select the following code that represents the type of fuel burned during the report year by using the dropdown menu:

- (CO) Coal
- (CM) Combination
- (GA) Natural Gas
- (LI) Lignite
- (OI) Oil
- (OT) Other
- (NO) None

Fuel No. 1: Quantity Consumed

Enter the quantity of fuel consumed during the report year in the first field.

In the second field, select the unit of measure from the dropdown menu. For coal or lignite, quantity consumed should be reported in thousands of tons; for oil, in thousands of barrels; and for gas, in millions of cubic feet. One barrel contains 42 gallons.

Note: For more information, refer to NERC-GADS Performance Report, Records 03 and 04, columns 18-24 and 51-56 (95 format) or columns 18-24 and 72-78 (05 format).

Fuel No. 1: Quantity Consumed Units

Enter the unit of measure from the dropdown menu. For coal or lignite, the quantity consumed is in thousands of tons; for oil, in thousands of barrels; and for gas, in millions of cubic feet.

Note: Refer to NERC-GADS Performance Report, Records 03 and 04, columns 18-24 and 51-56 (95 format) or columns 18-24 and 72-78 (05 format).

Fuel No. 1: Heat Content

Enter the average heat content in the fuel. Report a weighted average if the heat content of the fuel varied.

Select the unit of measure from the dropdown menu in the adjacent field. For solid fuel, heat content should be reported to the nearest Btu/pound; for oil, to the nearest Btu/gallon; and for gas, to the nearest Btu/cubic foot.

Note: Refer to NERC-GADS Data Reporting Instructions, Appendix E1, "Unit Design Data-Fossil Steam."

Fuel No. 1: Heat Content Units

Enter the unit of measure by selecting the term under the dropdown menu. For solid fuel, heat content is to the nearest Btu/pound; for oil, to the nearest Btu/gallon; and for gas, to the nearest Btu/cubic foot.

Fuel No. 1: % Sulfur

Enter the average sulfur content of the fuel, reported as a percentage to the nearest 0.1% by weight. Obtain this figure from an ultimate analysis of the fuel.

Note: Refer to NERC-GADS Data Reporting Instructions, Appendix E1, "Unit Design Data-Fossil Steam."

Fuel No.1: % Ash

Enter the average ash content of the fuel, reported as a percentage to the nearest 0.1% by weight. Obtain this figure from an ultimate analysis of the fuel.

Note: Refer to NERC-GADS Data Reporting Instructions, Appendix E1, "Unit Design Data-Fossil Steam."



Event Data

FPDB Utility Code

Enter the four-character utility code created on the Respondent Information workbook tab.

FPDB Plant Code

Enter the four-character utility code created on the Plant Profile workbook tab.

FPDB Unit Code

Enter the four-character unit code.

Year

Enter the four-digit year during which the event occurred.

Event Number

Enter the unique "event number" assigned to each event. If possible, assign these event numbers sequentially. An event that occurs over a number of months keeps the same event number. An event that occurs from one year to the next receives a new number.

Event Type

Enter the two-character code that best describes the event type. The five types of events are inactive, outage, derating, reserve shutdown, and noncurtailing.

The types of inactive states are the following:

- (IR) Inactive Reserve
- (MB) Mothballed
- (RU) Retired

The types of outages are the following:

- (PO) Planned Outage
- (MO) Maintenance Outage
- (PE) Planned Outage Extension
- (SE) Scheduled Outage Extension

- (SF) Startup Failure
- (U1) Unplanned Forced Outage—Immediate
- (U2) Unplanned Forced Outage—Delayed
- (U3) Unplanned Forced Outage—Postponed

The types of deratings are the following:

- (PD) Planned Derating
- (D4) Maintenance Derating
- (DM) Maintenance Derating Extension
- (DP) Planned Derating Extension
- (DE) Derating Extension
- (D1) Unplanned Forced Derating—Immediate
- (D2) Unplanned Forced Derating—Delayed
- (D3) Unplanned Forced Derating—Postponed

Refer to a reserve shutdown as (RS) and refer to a noncurtailing events as (NC).

Start of Event Date/Time

Enter the time (month/day/hour/minute) the event began. Use the 24-hour clock to record the time. Record midnight as 2400. Record the beginning of the new day as 0000.

End of Event Date/Time

Enter the time (month/day/hour/minute) the event ended.

Every event must have an end date at the end of each year. If an event continues into the new year, assign a “false” end date, for example 12/31/24/XX. The “XX” at the end of the number indicates that the event carries over into the new year.

Restart the event in the new year with a “false” start date, for example 01/01/00/XX. The “XX” in the start date links the event with the event containing “XX” in the end date. The event carried into the new year must have the following:

- A revision code of zero
- The same event type as the previous year’s entry
- All the system/component cause codes used in the previous year, except for the components that were repaired within the previous year
- Hours worked in the current year only

Gross Available Capacity

Enter the Gross Available Capacity (GAC). The GAC is the greatest capacity at which the unit can operate during the period of restriction caused by the derating.

Net Available Capacity

Enter the Net Available Capacity (NAC). The NAC is the GAC less any capacity used for station service or auxiliary loads.

Verbal Description of the Event (Optional)

Enter a detailed explanation of the event and the causes you identified. Include a balanced description of the major aspects of the event. Focus on the following areas:

- Description of failure
- Cause of immediate failure and contributing factors
- Corrective actions

Space is limited, so include as many abbreviations as possible.

If Derating Event, is the event a Dominant Derating? True/False

Enter "true" if the event is a dominant derating. Enter "false" if the event is not a dominant derating.



Maintenance

In this tab, report the operations costs for the plant or unit. Maintenance expenses include

- the cost of labor
- cost of materials used
- expenses incurred in production of steam for electric generation
- the cost of the electrical system that goes to the main power
- the cost of generator step-p transformer
- the cost of startup or standby transformers

Assign the minimal amount of expenses to the appropriate classification. Allocate expenses consistently. Report figures in thousands of dollars.

Note: In this section you will enter either unit- or plant-level data. See **Appendix: Reporting Unit- and Plant-level Data** at the end of this document for more information.

Utility Code

Enter the four-character utility code created on the Respondent workbook tab.

Plant/Unit Code

Enter the four-character plant or unit code created on the Plant or Unit Profile workbook tab when using plant-level data.

Report Year

Enter the year in which the data is being produced

Administrative & Environmental

Enter the following:

- All supervision and administrative services.
- Laboratory costs related to routine testing and analysis in support of operations.
- Costs for maintenance of buildings and office space on plant property.
- Environmental and permit expenses for personnel and fees that are not allocated.
- Rental, lease, or maintenance fees for equipment used in support of plant administration or supervision.

Flue Gas

Enter costs associated with stacks and flue gas conditioning in this classification. Enter costs associated with startup and standby transformers in this classification.

Flue gas equipment begins at the outlet of the air heater and extends through the stack or chimney. The "Cost Groups" tab shows a detailed list of the types of equipment included in these categories. Enter the data pertaining to flue gas in the corresponding columns below, and the database will add the cost automatically.

- **Flue Gas: Misc Eqpt & Stacks (\$000)**
- **Flue Gas: Particulate Removal (\$000)**
- **Flue Gas: Precipitators (\$000)**
- **Flue Gas: Scrubbers (\$000)**
- **Flue Gas: SCR/SNCR (\$000)**
- **Flue Gas: CO2 capture (\$000)**
- **Flue Gas: Mercury removal (\$000)**
- **Other Flue Gas Maintenance (\$000)**
- **Total Flue Gas Maintenance (\$000)**

Boiler Island

Enter the data pertaining to the boiler island in the corresponding columns.

- **Boiler startup equipment and auxiliaries**
- **Boiler**
- **Generator**
- **Turbine**

The scope of equipment included in the boiler island begins at the feeder to the boiler mill or pulverizer and ends at the outlet of the air heater. The "Cost Groups" tab shows a detailed list of the types of equipment.

Ash & Waste Disposal

Enter all data pertaining to Ash & Waste Disposal in the corresponding columns.

- **Bottom Ash Disposal**
- **Fly Ash Disposal**
- **Sludge Disposal**

Prior to treatment or processing for disposal, ash and waste disposal begins at the outlet of the primary equipment.



Operations

In this tab, report the operations costs for the plant or unit. Include only allocated costs and corporate directs related to ongoing operations of the plant. Do not include allocated costs and corporate directs that are not related to ongoing operations of the plant. For example, some facilities charge for water rights for future use or future units, while others charge on a “take or pay basis.” In this example, include the take or pay costs and exclude water costs for future units.

Operations costs include:

- Cost of labor
- Expenses incurred in the general supervision and direction of plant operation
- Cost of chemical to treat fuel, flue gas, and waste products

Report the balance of costs not covered by one of the cost categories described below as “other.” If you are unsure of a cost’s classification, contact the FPC for a ruling.

Note: In this section you will enter either unit- or plant-level data. See **Appendix: Reporting Unit- and Plant-level Data** at the end of this document for more information.

Utility Code

Enter the four-character utility code created on the Respondent workbook tab.

Plant/Unit Code

Enter the four-character plant or unit code created on the Plant or Unit Profile workbook tab.

Report Year

Enter the year in which the data is being produced.

Administrative & Environmental

Enter the following:

- All supervision and administrative services.
- Laboratory costs related to routine testing and analysis in support of operations.

- Costs for maintenance of buildings and office space on plant property.
- Environmental and permit expenses for personnel and fees that are not allocated.
- Rental, lease, or maintenance fees for equipment, software or computer equipment used in support of plant administration or supervision.
- Chemicals used to treat fuel, flue gas, and waste products are included in operations.

Flue Gas

Enter the data pertaining to Flue gas in the corresponding columns of the Input Template:

- **Flue Gas: Miscellaneous Eqpt and Stacks (\$000)**
- **Flue Gas: Particulate removal (\$000)**
- **Flue Gas: Precipitators (\$000)**
- **Flue Gas: Scrubbers (\$000)**
- **Flue Gas: SCR/SNCR (\$000)**
- **Flue Gas: CO2 capture (\$000)**
- **Flue Gas: Mercury removal (\$000)**

Flue gas equipment begins at the outlet of the air heater and extends through the stack or chimney. Enter costs associated with stacks and flue gas conditioning in this classification. Include costs associated with startup standby transformers in this classification. The "Cost Groups" tab shows a detailed list of the types of equipment.

Boiler Island

Enter the data pertaining to the Boiler Island in the corresponding columns of the Input Template:

- **Boiler startup and auxiliaries**
- **Boiler**
- **Generator**
- **Turbine**

The scope of equipment included in the boiler island begins at the feeder to the boiler mill or pulverizer and ends at the outlet of the air heater. The "Cost Groups" tab shows a detailed list of the types of equipment.

Ash & Waste Disposal

Enter all data pertaining to Ash & Waste Disposal in the following columns of the Input Template:

- **Bottom Ash Disposal**
- **Fly Ash Disposal**
- **Sludge Disposal**

Prior to treatment or processing for disposal, ash and waste disposal begins at the outlet of the primary equipment.

Byproduct Sales

Enter the amount from the sale of fly ash, bottom ash, and other by-products associated with operations.

Labor

Enter all payroll costs for full-time and part-time personnel, excluding contractors. Include sick, vacation, and overtime costs. Report these figures as a percentage to one decimal place.

Material

Enter all costs for materials charged against operations or maintenance accounts. Exclude equipment rentals and contractor costs. Report these figures as a percentage to one decimal place.

Other

Enter all other contractor labor and costs. Describe significant details in the Notes to Submittal. Report these figures as a percentage to one decimal place.

Payroll Taxes

Enter FICA, Medicare, pension and benefits associated with regular and overtime labor.

Corporate A&G

Enter the corporate and internal management and administrative costs not directly charged to a plant. The cost can include engineering, management, plant security, safety, and insurance (property and liability). Include A&G costs as internal/corporate overhead.

The cost excludes depreciation, property taxes, preferred stock, equity, and amortization.

Insurance

Enter the total cost of insurance for the year.



Fuel Data

Report actual plant- and unit-level costs where available. If actual unit-level costs are not available, estimate data in accordance with a rational method determined by your utility.

Note: In this section you will enter either unit- or plant-level data. See **Appendix: Reporting Unit- and Plant-level Data** at the end of this document.

Utility Code

Enter the four-character utility code created on the Respondent workbook tab.

Plant/Unit Code

Enter the four-character plant or unit code created on the Plant or Unit Profile workbook tab.

Report Year

Enter the year for which the data is being produced.

Notes: Participants may submit data on the type, quality, and amount consumed for as many as three fuels from the greatest to least contribution.

Fuel Type

Select the code from the dropdown menu that represents the type of fuel burned during the report year:

- (CO) Coal
- (CM) Combination
- (GA) Natural Gas
- (LI) Lignite
- (OI) Oil
- (OT) Other (Specify)
- (NO) None

Cost of Fuel Consumed

Enter the dollar value of fuel consumed during the report year in thousands of dollars.

Cost of Startup Fuel Consumed

Enter the dollar value of startup fuel consumed during the report year in thousands of dollars.

Total Cost of Fuel Consumed

Enter the cost of fuel used in the production of steam for the generation of electricity in thousands of dollars. The worksheet will calculate this figure.

Fuel Handling Expenditures

Enter the total handling expenditures. Fuel handling expenditures include Operations, Maintenance, and Other. Report this figure in thousands of dollars.

The scope of fuel handling begins when fuel is delivered to the plant. The scope ends at the feeder for the boiler mill or pulverizer.

Note: Common costs are typically part of this category for multi-unit facilities. Allocate these costs to tons of fuel consumed.

Total Fuel Cost

Enter the sum of the total cost of fuel consumed and fuel handling expenditures for the total fuel cost. The worksheet calculates this figure in the column when the data is available in the thousands of dollars.

For those plants that report plant-level data, this figure is equal to the reported data in FERC Account 501.



This section is due when you initially submit your information and annually thereafter. If actual unit-level expenditures are not available, estimate data based on a rational method determined by the reporting utility.

Utility Code

Enter the four-character utility code created on the Respondent workbook tab.

Plant/Unit Code

Enter the four-character plant or unit code created on the Plant or Unit Profile workbook tab.

Report Year

Enter the year for which data are being reported.

New Capital

Enter the dollar value of initial investment for equipment or assets that do not replace existing equipment or assets. Include environmental equipment, safety equipment, and betterment projects. Environmental and safety concerns and regulations determine capital. Examples of new capital include:

- Installing FGD
- Installing SGR
- Replacing non-low-NOx burners with low-NOx burners
- Expanding of an existing ash basin
- Adding new plant structures (buildings, platforms, etc.)
- Adding new SCR catalytic layers
- Adding new instrumentation or monitoring
- Adding new controls
- Adding new pumps to increase capacity to existing systems

Include significant, non-routine alterations or structural changes that increase performance—for example, increased capacity or efficiency gains.

Note: Prorate unit capacity uplifts. Only the incremental cost of improvement resulting from an “in-kind” replacement is considered new capital. Report the remainder of the expenditure—the portion equal to “in-kind” replacement—as routine capital. Estimate allocated expenditures using a relation method determined by your utility.

Allocation Example: An HP/IP section of the main turbine of a 100 MW unit is replaced with newer technology that results in a 10 MW increase in unit capacity. A portion of the cost of the new technology would be reported as new capital, while the balance of the cost would be reported as routine capital.

Enter the amount spent on the following:

- **New Capital: Boiler (\$000)**
- **New Capital: Turbine (\$000)**
- **New Capital: Generator (\$000)**
- **New Capital: Transformers (\$000)**
- **New Capital: Fuel Handling (\$000)**
- **New Capital: Balance of Plant (\$000)**
- **Capital Spares (\$000)**

Combine all of the new capital categories to find **Total New Capital (\$000)**.

Enter the amount spent on the following:

- **New Env Capital: Ash Pond(\$000)**
- **New Env Capital: Particulate Removal (\$000)**
- **New Env Capital: Precipitator (\$000)**
- **New Env Capital: Scrubber (\$000)**
- **New Env Capital: SCR/NSCR (\$000)**
- **New Env Capital: CO2 Capture (\$000)**
- **New Env Capital: Mercury Removal (\$000)**
- **New Env Capital: Fugitive Emissions Sys (\$000)**
- **Capital Spares, Environmental (\$000)**
- **Other New Environmental Capital (\$000)**

Combine all of the New Environmental Capital categories to find **Total New Environmental Capital (\$000)**.

Routine Capital

Enter the dollar value of “in-kind” or “maintenance” replacements of capital assets—including environmental and safety—that are expected to provide economic benefit for more than one year. Include reoccurring investment that keeps the plant operating efficiently or that offsets the need for routine or unscheduled maintenance.

Environmental or safety concerns or regulations determine routine environmental and safety replacement capital. Capital projects that include demolition work are considered routine.

Examples of routine capital include replacing the following:

- Controls with DCS
- Boiler tube sections or pressure parts
- Main steam line
- Feedwater heater
- Turbine components (excluding unit capacity uplift benefits)
- Generator
- Stack liner
- Fuel handling mobile equipment
- Transformers (excluding unit capacity uplift benefits)
- Feedwater pump (or internals)
- Crane
- Sootblower panel with a new technology panel
- Existing low-NOx burners with new low-NOx burners

Note: If in doubt as to whether a capital project is considered new or routine capital, report the expenditure as routine.

Enter the amount spent on the following categories:

- **Routine Capital: Boiler Plate (\$000)**
- **Routine Capital: Turbine (\$000)**
- **Routine Capital: Generator (\$000)**
- **Routine Capital: Transformers (\$000)**
- **Routine Capital: Fuel Handling (\$000)**
- **Routine Capital: Balance of Plant (\$000)**

Combine the Routine Capital categories to calculate **Total Routine Capital, Power Block (\$000)**.

Enter the amount spent on the following categories:

- **Routine Env Capital: Ash Pond (\$000)**
- **Routine Env Capital: Particulate Removal (\$000)**
- **Routine Env Capital: Precipitator (\$000)**
- **Routine Env Capital: Scrubber (\$000)**
- **Routine Env Capital: SCR/SNCR (\$000)**
- **Routine Env Capital: CO2 Capture (\$000)**
- **Routine Env Capital: Mercury Removal (\$000)**
- **Routine Env Capital: Fugitive Emissions Sys (\$000)**
- **Other Routine Environment Capital (\$000)**

Combine the Routine Environmental Capital to calculate **Total Routine Environmental Capital (\$000)**.



Staffing Top Tier

This section is due when you initially submit your information. Please submit this section annually. First tier staffing includes those personnel who provide daily, baseline support of plant operations and maintenance.

Utility Code

Enter the four-character utility code created on the Respondent workbook tab.

Plant Code

Enter the four-character plant code created on the Plant Profile tab.

Report Year

Enter the year for which data are being reported.

Headcount: Daily Plant Personnel

Enter the number of utility personnel who are direct employees of the plant and who perform core or baseline activities at the plant. Include the following personnel who support day-to-day plant operations:

- Operations
- Maintenance
- Multi-skilled
- Fuel handling
- Administrative
- Stores
- Supervisory
- Management

Headcount: Daily Matrixed Support

Enter the number of utility personnel who are assigned to or who support multiple locations. Matrixed personnel address the priorities of the plant manager while reporting to a central or corporate manager.

Report the number of personnel who provide daily support to a small number of plants—e.g., engineers, buyers, and environmental and safety personnel. Exclude general loadings from central/corporate services. Prorate or allocate personnel who provide daily services to multiple sites—e.g., Sourcing or Human Resources staff—to the individual sites served.

Note: Count both on-site and off-site positions and provide best estimates in decimal parts—e.g., 0.10, 0.25, 0.50, 0.75 employees.

Headcount: Daily Contracted Personnel

Enter the number of contractor personnel who work at the plant and who perform core or steady state functions in daily support of routine plant activities. Include contractors who provide daily support to one or more plants. Exclude managed task or turnkey services—e.g., heat exchanger cleaning, equipment rebuilds—that are typically tracked by cost only.

Examples of contracted personnel include:

- Security force personnel
- Janitorial personnel
- On-site contractors/vendors
- Administrative service personnel
- Staff augmentation personnel who provide daily support—e.g., Operations, Engineering, or Maintenance personnel

Other examples include individuals contracted to:

- Operate or maintain FGD by-product or ash by-product equipment.
- Provide routine administrative/clerical support to the plant for more than six months.
- Write plant procedure, if procedure writing is a routinely staffed position, and if the individual works at the plant full time.
- Provide consulting services, if they have expertise beyond the normal capability or availability of the plant, and if they help solve a problem over less than six months.
- Provide on-site consulting services dedicated to major capital projects, such as a turbine replacement, generator replacement, or power upgrade.
- Provide as-needed repair services, such as for mobile equipment or HVAC.

Exclude recurring functions performed on a seasonal or intermittent basis. Contractors supporting capital projects, outage preparation, or outage activities should not be counted as daily baseline support.

Note: Count both on-site and off-site positions and provide best estimates in decimal parts—e.g., 0.10, 0.25, 0.50, 0.75 employees.

Total Plant Regular Headcount

The database will calculate the sum of the three plant staffing categories.

OSHA Recordable Incident Rate

Enter the result of the following formula:

(# recordable injuries x 200,000)

÷

employee hours worked

- The number of recordable injuries includes all occupational injuries and illnesses reported on the plant's OSHA 300 log. This is the sum of columns G, H, I, and J from the 300 log.
- The number of employee hours worked is the total number of hours worked by employees whose injuries would be charged to the OSHA 300.
- Report this figure to one decimal place.

If the actual number of recorded employee hours worked on the job is not available, estimate this number by using the following formula:

(Number of employees x 167 hours month x 12 months)

÷

Year

Include only company employees assigned to the plant site.



Staffing Second Tier

Utility Code

Enter the four-character utility code created on the Respondent workbook.

Plant Code

Enter the four-character plant code created on the Plant Profile workbook tab.

Report Year

Enter the year for which data are being reported.

Headcount: Plant Operations

Enter the number of utility employees responsible for the following:

- Operating all plant systems.
- Preparing operating procedures.
- Preparing and delivering training.
- Preparing or reviewing responses to operating events and associated inquiries from other organizations.

Include the following employees:

- Operators of exhaust scrubber systems and FGD by-product systems.
- Personnel assigned to a fossil plant who operate and perform minor maintenance on combustion turbine systems.
- Supervisors who direct Operations and Plant personnel.

Headcount: Fuel Handling

Enter the number of utility employees who operate and perform minor maintenance on coal and ash handling systems and equipment (e.g., trains, dumpers, bulldozers, barges, boats, and coal belt and ash removal systems). Include supervisors who direct Fuel Handling personnel.

Note: If Plant Operations and Fuel Handling personnel are interchangeable, allocate the headcount to estimate a number for each category.

Headcount: Maintenance

Enter the number of utility employees who direct and perform routine preventive maintenance, corrective maintenance, and predictive maintenance on all plant equipment and systems, and on coal yard and fuel supply systems. Include all the following:

- Personnel who perform planning and scheduling activities for maintenance and testing activities.
- Personnel who direct and perform facilities maintenance, general property maintenance and repairs, landscaping, telephone systems, and vehicle maintenance.
- Supervisors who direct Plant/Site Maintenance personnel.

Note: Exclude individuals who provide maintenance services from a centralized organization that provides routine maintenance activities and supplements regular plant maintenance crews, unless these individuals routinely report to the plant more than six months of the year.

Headcount: Multi-Skilled

Enter the number of utility employees who perform any combination of operating and maintenance tasks in support of daily plant operation. Include supervisors who direct multi-skilled personnel.

Headcount: Engineering/Technical

Enter the number of utility employees who provide subject matter expertise in support of daily plant operational and maintenance functions. Engineering/Technical personnel do the following:

- Assist Operations and Maintenance groups in the development of corrective maintenance actions.
- Develop and review operating procedures and technical reports/responses.
- Review performance reports, equipment modifications, and system-related studies.
- Coordinate and review post-maintenance and post-modification testing and serve as the point of contact for technical and procedural system testing issues, including component, system, and plant thermal and performance testing.
- Perform manual and computer-aided design and engineering functions.
- Resolve field questions.
- Maintain piping and instrument diagrams and electric power line diagrams.
- Provide technical expertise and electrical engineering services and ensure design integrity for the following:

- High-, medium-, and low-voltage distribution systems including DC and instrument power.
- Related components including motors, circuit breakers, transformers, batteries, chargers, and inverters.
- Instrumentation and control systems and components.

Include personnel who provide the following engineering support services to Maintenance:

- Develop and maintain reliability-centered maintenance, predictive maintenance, and preventive maintenance programs.
- Create new methods development and process re-engineering.
- Analyze failure prevention.
- Estimate life expectancy.
- Apply system and component performance lessons learned.
- Evaluate system and component performance.
- Monitor system operating performance parameters.

Note: Exclude project engineers or project managers who repair or replace plant equipment and do not support daily plant operations and maintenance.

Headcount: Administrative

Enter the number of utility employees who provide administrative and support functions at the plant site. Include the following type of employees:

- Stores personnel responsible for receiving, inspecting, storing, dispensing and staging materials and parts, and related inventory management tasks.
- Personnel responsible for plant budget and accounting information, such as budget development or budget management reports for managers.
- Personnel who perform administrative support functions, such as:
 - Processing employee timesheets and benefit requests.
 - Producing plant performance reports.
 - Ordering office supplies and equipment.
 - Administering document control and archiving.
 - Coordinating meetings. All clerks, stenographers, typists, file clerks, and technical assistants are included in this function.

- Personnel responsible for:
 - Human resources and personnel programs.
 - Systems such as appraisal, compensation, vacancy selection, and promotion.
 - Coordinating employment and EEO activities.
 - Managing development training and union relations.
- Safety personnel who keep track of OSHA requirements and serve as OSHA contacts; and who are responsible for medical exams, emergency medical assistance, and loss prevention.
- Guard force personnel responsible for manning security shifts and operating security systems.

% Overtime

Enter an estimate (expressed as a percent) of the amount of overtime worked by each of the following staffing categories:

- **% Overtime: Plant Operations**
- **% Overtime: Fuel Handling**
- **% Overtime: Maintenance**
- **% Overtime: Multi-Skill**
- **% Overtime: Engineering Technical**
- **% Overtime: Administrative**

Report this figure as a percentage to one decimal place.

Contractor Support

Select (Yes) from the dropdown menu if contractor personnel were used to supplement or replace utility personnel at levels equal or greater than 50% in any of the second-tier categories listed. Otherwise, select (No). Do those steps for the following categories:

- **Contractor Support: Plant Operations**
- **Contractor Support: Fuel Handling**
- **Contractor Support: Maintenance**
- **Contractor Support: Multi-Skill**
- **Contractor Support: Engineering Technical**
- **Contractor Support: Administrative**



Staffing Third Tier

Utility Code

Enter the four-character utility code created on the Respondent workbook.

Report Year

Enter the year for which data are being reported.

Capacity Supported, MW

Enter the sum of the net maximum capacity of all fossil steam units supported by third-tier personnel. Report this figure in megawatts (MW).

Active Units Supported

Enter the total number of active fossil steam units supported by third-tier personnel.

Headcount: Technical Experts/Engrs Available

Enter the number of personnel available to the plants during the report year, whether they worked at a plant or not. Include the personnel who provide:

- Operational or maintenance guidance on plant equipment and systems (e.g., turbine/generators, thermal performance, or water chemistry).
- Technical support for daily operation and maintenance tasks, such as chemistry and lab technician tasks or environmental monitoring, reporting, and licensing.
- Training and/or the maintenance of training records and training equipment for plant staff.

Headcount: Roving Mtce Support Available

Enter the number of personnel who are centralized resources and are available to supplement local maintenance staff by performing maintenance and construction work throughout the year, not just for forced or planned outages. Report the number of personnel who were available to the plants during the report year, whether they worked at a plant or not.

Headcount: Central Repair Shop Support Available

Enter the number of personnel who staff a central repair shop that provides repair services that supplement or surpass the abilities of plant maintenance personnel. Report the number of personnel who available to the plants during the report year, whether they worked at a plant or not.

Location Performing Work

Select one of the following (plant, central/regional, contractors, or N/A) from the dropdown menus to show who is responsible for each activity listed:

- **Safety Program Coordination Performed By --**
- **Sourcing & Contract Admin Performed By --**
- **Safety Training Performed By --**
- **Operator Training Performed By --**
- **Maintenance Training Performed By --**
- **Supply Chain Purchasing Performed By --**

Subject Matter Experts (SME)

Select (Y) if a technical subject matter expert or engineer is available to support the equipment or system listed. Select (N) if such an individual is not available. Select (Y) or (N) for the following categories:

- **SME, Burner (Combustion)**
- **SME, Controls**
- **SME, Generator**
- **SME, Turbine**
- **SME, Transformers**
- **SME, Motors**
- **SME, Water Chemistry**
- **SME, Metallurgy**
- **SME, Vibration**
- **SME, Lubrication**
- **SME, Aux Electrical Eqpt (Switchgear/MCC)**
- **SME, High Energy Piping**
- **SME, Fuel & Ash**
- **SME, Welding**
- **SME, Structural**
- **SME, SCR/SNCR**
- **SME, Scrubber**
- **SME, Precipitator / Baghouse / Particulate Coll**
- **SME, Boiler Component Expert**
- **SME, Boiler**

- **SME, Mills / Pulverizers**
- **SME, Heat Exchangers**
- **SME, Condenser**
- **SME, Pumps**

Continuous Perf Monitoring Center?

Select (Y) from the dropdown menu if the utility has a continuous performance monitoring center. Select (N) if it does not.



Appendix: Reporting Unit- and Plant-level Data

Report actual plant- or unit-level costs where available. If actual unit-level costs are not available, submit estimated data in accordance with a rational method determined by your utility. Enter all figures in thousands of dollars.

Allocate common costs using a factor based on 2/3 of service hours and 1/3 capacity for each unit in plants primarily made up of load following and/or peaking units. For plants primarily made up of base load units, use a factor based on 2/3 generation and 1/3 capacity.

Use FERC Accounts 510 through 515 for utilities that use the FERC Operation and Maintenance Expense Chart of Accounts.

Within each classification, one or more second level cost categories describe equipment groups. Report the balance of costs not covered by one of the cost categories as "other."

If you doubt the classification of a cost, contact the FPC for a ruling.