EPA Base Case v.5.13 Parsed File User Guide

IPM output files report aggregated results for "model" plants (i.e., aggregates of generating units with similar operating characteristics). Parsed files approximate the IPM results at the generating unit level. This document defines the column headers found in EPA Base Case v.5.13 parsed files.

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
UniqueID	A	-------	The unique identifier assigned to a boiler or generator within a plant. It consists of the Plant ID (or ORIS Code), an indication of whether the unit is a boiler ("B"), generator ("G"), or committed unit ("C"), and the Unit ID. For example, for the Unique ID "113_B_1", "113" is the Plant ID, "B" indicates that this unit is a boiler, and "1" indicates that the ID of the boiler is 1.	-------
RegionName	B	-------	The electricity grid region the unit is located in.	-------
StateName	C	-------	These four fields identify the geographic location of the unit. The State Code is the FIPS State Code, and the County Code is the FIPS County Code. New units have blanks in these columns, while committed units have zeros. Federal information processing standards (FIPS) codes are a standardized set of numeric or alphabetic codes issued by the National Institute of Standards and Technology (NIST) to ensure uniform identification of geographic entities through all federal government agencies.	-------
StateCode	D	-------		-------
CountyName	E	-------		-------
CountyCode	F	-------		-------
ORISCode	G	-------	A unique identifier assigned to each power plant in NEEDS. While the ORIS code is unique for each plant, all generating units within a plant will typically have the same ORIS code. For committed units (i.e., those not currently operating, but firmly anticipated to be operational in the future), the entry in this field might be a dummy ORIS code assigned as a placeholder unique ID to the committed plant. (Note: ORIS originally referred to the Office of Regulatory Information Systems in the Department of Energy (DOE) Energy Information Administration (EIA) which was responsible for assigning unique identification codes to utility power plants.)	-------
UnitID	H	-------	The identifier assigned to each unit/boiler in a given plant.	-------
PlantName	I	-------	The plant's name.	-------
HeatRate	J	-------	The unit's heat rate.	-------
OnLineYear	K	-------	For existing units, this is the year the unit came on line. For committed units, this is the year the unit is projected to come on line	-------
RetirementYear	L	-------	The year a unit is planned to be retired. For units without a firm retirement year, this field has a value of 9999	-------

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
PlantType	M	-------	The type of electric generating unit, usually defined by the "prime mover" and/or fuels burned. "Prime mover" refers to the machine (e.g., engine, turbine, water wheel) that drives an electric generator or the device that converts energy to electricity directly (e.g., photovoltaic solar and fuel cell(s)).	Biomass Coal Steam Combined Cycle Combustion Turbine Fossil Waste Fuel Cell Geothermal Hydro IGCC Landfill Gas Municipal Solid Waste Non-Fossil Waste Nuclear O/G Steam Pumped Storage Solar Tires Wind
Firing	N	-------	This field, which applies only to boilers, indicates the burner type and configuration (e.g., cell, cyclone, FBC (fluidized bed combustion), stoker/SPR, tangential, or vertical). A blank appears in instances where the firing characteristics of a boiler are unknown or the unit is a not a boiler.	**Cell:** boilers that combine 2-3 standard burners into a compact, vertical assembly installed on the furnace wall; multiple cells utilized within a furnace. **Cyclone:** A special type of burner for coals with low fusion point ashes. Combustion occurs within the horizontal burner generating high temperatures which turn the ash into molten slag. The term "wet bottom" furnace often accompanies the cyclone burner. **FBC: "fluidized bed combustion" where solid fuels are suspended on upward-blowing jets of air, resulting in a turbulent mixing of gas and solids and a tumbling action which provides especially effective chemical reactions and heat transfer during the combustion process.**

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
				Stoker/SPR: stoker boilers where lump coal is fed continuously onto a moving grate or chain which moves the coal into the combustion zone in which air is drawn through the grate and ignition takes place. The carbon gradually burns off, leaving ash which drops off at the end into a receptacle, from which it is removed for disposal.
				Tangential (also referred to as "corner firing"): burners located along furnace corners in multiples of 4. Burner angle is off-set working in conjunction with the opposing corner burner to create a vertical, circular swirling combustion zone within the furnace.
				Turbo (wall fired burner): Burner design for pet coke and low volatile bituminous coals (Riley trademark name: "Turbo Furnace"). Hour glass shaped furnace with rectangular shaped burners angled downwards.
				Vertical: standard furnace (assume wall fired)
				Wall: standard burner / furnace design used today. Circular burners located on the front and rear furnace walls at multiple elevations.

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
Bottom	O	-------	This field, which applies only to boilers, indicates whether the bottom of the combustion chamber is "wet" (i.e., ash is removed from the furnace in a molten state) or "dry" (i.e., the boiler has a furnace bottom temperature below the ash melting point and the bottom ash is removed as a solid). A blank appears in instances where the bottom characteristics of a boiler were not known or the unit was not a boiler.	Dry Wet
EMFControls	P	-------	This field shows the combination of SO2 scrubbers, NOX post-combustion controls, and particulate matter controls that already exist at a unit. The entries in this column are compiled from the "NOx Post-CombControl," "Wet/DryScrubber" and "Particulate Matter Type" fields. Together with the entry in the "Firing" and "Modeled Fuels" fields, the entries in this field are used for the assignment of the Emission Modification Factors (EMFs) for mercury. The EMFs enable the model to capture mercury emission reductions that are a function of the rank of coal burned (bituminous, subbituminous and lignite), the specific burner type, and the configuration of SO2, NOX, and particulate matter control devices. Consolidating the controls that impact mercury reductions into this field helps to insure that the correct EMFs are assigned to each unit. Note that EMFs are metric of the extent of mercury emission reduction achieved by these non-mercury controls, and do not include the presence or impact of mercury-specific controls (e.g., ACI).	-------

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values	
NOxControl	Q	-------	This field indicates the NOX combustion controls which are in existence at a generating unit before the model is run. Combustion controls reduce NOX emissions during the combustion process generally by regulating flame characteristics such as temperature and fuel-air mixing.	AA	Advanced Overfire Air
				BF	Biased Firing (alternate
				BOOS	Burners-Out-Of-Service
				CM	Modification/Fuel Reburning
				CO	Combustion Optimization
				DLNB	Dry Low NOx Burners
				FR	Flue Gas Recirculation
				FU	Fuel Reburning
				H2O	Water Injection
				LA	Low Excess Air
				LN	Low NOx Burner
				LNB	Low NOx Burner Technology
				LNBO	Low NOx Burner Technology
				LNC1	Low NOx Burner Technology w/ Closed-coupled OFA
				LNC2	Low NOx Burner Technology w/ Separated OFA
				LNC3	w/ Closed-coupled/Separated OFA
				LNCB	Low NOx Cell Burner
				LNF	Low NOx Furnace
				MR	Methane Reburn
				N2	Nitrogen
				NDI	Nitrogen Diluent Injection
				NGR	Natural Gas Reburn
				NH3	Ammonia Injection
				OFA	Overfire Air
				other	Other
				ROFA	Rotating Overfire Air
				SC	Slagging
				SOFA	Stationary Overfire Air
				STC	Staged Combustion
				STM	Steam Injection
				WIR	Underfire Air

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
SO2Control	R	-------	This field indicates the SO2 controls which are in existence at a generating unit before the model is run. SO2 controls reduce SO2 emissions by using chemical processes to remove SO2 from the post-combustion emission stream.	Dry Scrubber Wet Scrubber Reagent Injection
FossilUnit	S	-------	Indicates whether a unit is fossil-fuel fired	Fossil Non-Fossil
BGCI	T	-------	Indicates where a unit is an existin boiler, and existing generator, or a committed unit that is not currently in operation	B - Boiler G - Generator C - Committed
Year	U	-------	The model run year from which the parsed results were derived.	-------
FuelType	V	-------	This field indicates the type of fuel used by the unit.	Biomass Coal Fwaste Geothermal Hydro LF Gas MSW NaturalGas Non-Fossil Nuclear Oil Pet. Coke Solar Waste Coal Wind
RetrofitSO2NOxControls	W	-------	Summarizes all of the control technologies that a unit has put on. The retrofits are cumulative to the year for which the run is parsed. For instance, if the parsed file is for 2020, it will include all retrofits projected by the model for the unit through 2020.	CC Retirement Coal Retirement CT Retirement Mercury Control Mercury Control / Coal Retirement O/G Retirement SCR SCR - O/G Steam Scrubber Scrubber / Mercury Control Scrubber / SCR Scrubber / SNCR SNCR

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
FuelUseWinter	X	TBtu	Projected fuel consumed (TBtu) at the unit in January - April and October - December during the year for which the run was parsed.	-------
FuelUseSummer	Y	TBtu	Projected fuel consumed (TBtu) at the unit in May - September during the year for which the run was parsed.	-------
FuelUseTotal	Z	TBtu	Projected fuel consumed (TBtu) at the unit during the year for which the run was parsed.	-------
BITFuelUseWinter	AA	TBtu	These nine columns give the projected coal consumption (TBtu), by coal rank, during the summer months (May - September), winter months (January - April and October - December), and the entire year for which the run was parsed.	-------
BITFuelUseSumme	AB	TBtu		-------
BITFuelUseTotal	AC	TBtu		-------
SUBFuelWinter	AD	TBtu		-------
SUBFuelSummer	AE	TBtu		-------
SUBFuelTotal	AF	TBtu		-------
LIGFuelWinter	AG	TBtu		-------
LIGFuelSummer	AH	TBtu		-------
LIGFuelTotal	AI	TBtu		-------
GWhWinter	AJ	GWh	Projected generation (GWh) produced by the unit in January - April and October - December during the year for which the run was parsed.	-------
GWhSummer	AK	GWh	Projected generation (GWh) produced by the unit in May - September during the year for which the run was parsed.	-------
GWhTotal	AL	GWh	Projected generation (GWh) produced by the unit during the year for which the run was parsed.	-------
CO2Winter	AM	Mtons (1000s short tons)	Projected winter (January - April and October - December) CO_2 emissions (MTons) during the year for which the run was parsed.	-------
CO2Summer	AN	Mtons (1000s short tons)	Projected summer (May - September) CO_2 emissions (MTons) during the year for which the run was parsed.	-------
CO2Total	AO	Mtons (1000s short tons)	Projected annual CO_2 emissions (MTons) during the year for which the run was parsed.	-------

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
MERWinter	AP	Tons (short tons)	Projected winter (January - April and October - December) mercury emissions (MTons) during the year for which the run was parsed.	-------
MERSummer	AQ	Tons (short tons)	Projected summer (May - September) mercury emissions (MTons) during the year for which the run was parsed.	-------
MERTotal	AR	Tons (short tons)	Projected annual mercury emissions (MTons) during the year for which the run was parsed.	-------
NOXWinter	AS	Mtons (1000s short tons)	Projected winter (January - April and October - December) NOx emissions (MTons) during the year for which the run was parsed.	-------
NOXSummer	AT	Mtons (1000s short tons)	Projected summer (May - September) NOx emissions (MTons) during the year for which the run was parsed.	-------
NOXTotal	AU	Mtons (1000s short tons)	Projected annual NOx emissions (MTons) during the year for which the run was parsed.	-------
SO2Winter	AV	Mtons (1000s short tons)	Projected winter (January - April and October - December) SO2 emissions (MTons) during the year for which the run was parsed.	-------
SO2Summer	AW	Mtons (1000s short tons)	Projected summer (May - September) SO2 emissions (MTons) during the year for which the run was parsed.	-------
SO2Total	AX	Mtons (1000s short tons)	Projected annual SO2 emissions (MTons) during the year for which the run was parsed.	-------
HCLWinter	AY	Mtons (1000s short tons)	Projected winter (January - April and October - December) HCl emissions (MTons) during the year for which the run was parsed.	-------
HCLSummer	AZ	Mtons (1000s short tons)	Projected summer (May - September) HCl emissions (MTons) during the year for which the run was parsed.	-------
HCLTotal	BA	Mtons (1000s short tons)	Projected annual HCl emissions (MTons) during the year for which the run was parsed.	-------
ASHWinter	BB	Mtons (1000s short tons)	Projected winter (January - April and October - December) ash (MTons) during the year for which the run was parsed.	-------
ASHSummer	BC	Mtons (1000s short tons)	Projected summer (May - September) ash (MTons) during the year for which the run was parsed.	-------
ASHTotal	BD	Mtons (1000s short tons)	Projected annual ash (MTons) during the year for which the run was parsed.	-------

Field Name	Column	Unit of Measure	Definition	Key to Recurring Column Values
FOMCost	BE	Million US$ / yr	Fixed operation and mainetenance (O&M) cost for the unit during the year for which the run was parsed	-------
VOMCostWinter	BF	Million US$ / yr	Variable operation and maintenance (O&M) cost for the unit for the winter months (January - April and October - December) during the year for which the run was parsed	-------
VOMCostSummer	BG	Million US$ / yr	Variable operation and maintenance (O&M) cost for the unit for the summer months (May - September) during the year for which the run was parsed	-------
VOMCostTotal	BH	Million US$ / yr	Variable operation and maintenance (O&M) cost for the unit during the year for which the run was parsed	-------
FuelCostWinter	BI	Million US$ / yr	Fuel cost for the unit for the winter months (January - April and October - December) during the year for which the run was parsed	-------
FuelCostSummer	BJ	Million US$ / yr	Fuel cost for the unit for the summer months (May - September) during the year for which the run was parsed	-------
FuelCostTotal	BK	Million US$ / yr	Fuel cost for the unit during the year for which the run was parsed	-------
CapitalCost	BL	Million US$ /yr	Annualized capital cost expenditures (i.e. added controls and upgrades) for the unit during the year for which the run was parsed	-------
Capacity	BM	MW	The net summer dependable capacity (in megawatts) of the unit available for generation for sale to the grid. Net summer dependable capacity is the maximum capacity that the unit can sustain over the summer peak demand period reduced by the capacity required for station services or auxiliary equipment.	-------
Post Combustion Control and Heat Rate	BN	-------	Summary of the SO_2, NO_X, and Mercury post-combustion controls installed at the unit during the run year, as well as any heat rate improvements made to the unit	-------
Post Combustion Control (Scrubber:	BO	-------	Indicates if the unit has a Wet or Dry Scrubber.	-------
Baghouse Retrofit (in conjunction with either dry FGD, ACI+Toxecon, and/or DSI)	BP	-------	For some plant configurations, a baghouse is required for some retrofits (deals with meeting PM standard as cobenefit, so other PM controls not needed)	ACI with Toxecon Dry Scrubber Dry Scrubber / ACI with Toxecon Dry Scrubber / DSI DSI