IPM v.4.10 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 IPM v.4.10 parsed files.

Field Name	Column	Definition	Key to Recurring Column Values
Year	A	The model run year from which the parsed results were derived.	———
Unique Id	B	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.	———
Plant Name	C	The plant's name.	———
Plant Type	D	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
State Name	E	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.	———
State Code	F		———
County	G		———
County Code	H		———
Plant ID	I	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	———

Field Name	Column	Definition	Key to Recurring Column Values
		Department of Energy (DOE) Energy Information Administration (EIA) which was responsible for assigning unique identification codes to utility power plants.)	
Unit ID	J	The identifier assigned to each unit/boiler in a given plant.	———
Capacity (MW)	K	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.	———
Fuel Type	L	The fuels type selected by the model for combustion during the given run year	Coal Fwaste NaturalGas Oil Other Pet. Coke Waste Coal
Firing	M	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 temps 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. 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.
Bottom	N	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	Dry Wet

Field Name	Column	Definition	Key to Recurring Column Values	
		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.		
Hg EMF Inputs	O	This field shows the combination of SO_2 scrubbers, NO_X 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 as shown in the six subsequent "Controlled Hg EMF" and "Uncontrolled Hg EMF" fields. 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 SO_2, NO_X, 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).	———	
NO_X Comb Control	P	This field indicates the NO_X combustion controls which are in existence at a generating unit before the model is run. Combustion controls reduce NO_X 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 burners)
			BOOS	Burners-Out-Of-Service
			CM	Combustion 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 (Dry Bottom only)
			LNBO	Low NOx Burner Technology w/ Overfire Air
			LNC1	Low NOx Burner Technology w/ Closed-coupled OFA
			LNC2	Low NOx Burner Technology w/ Separated OFA
			LNC3	Low NOx Burner Technology 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

Field Name	Column	Definition	Key to Recurring Column Values	
			SC	Slagging
			SOFA	Stationary Overfire Air
			STC	Staged Combustion
			STM	Steam Injection
			WIR	Underfire Air
Retrofit Control 1	Q	The emission control technology retrofits that the model projects will be installed on the unit. Note, the model can retrofit units with control technologies at two different stages. Retrofit Control 1 shows the control technologies installed in stage 1. Retrofit Control 2 shows the control technologies installed in stage 2. Early retirement, though not a control, is treated as a retrofit in the modeling and is therefore included in the column. Early retirement indicates that the model projected the unit to retire early.	See below	
Retrofit Control 2	R			
Retrofit SO2/NOx Controls	S	Summarizes all of the control technologies that a unit has put on in stage 1 and stage 2. This column combines the information that appears in the Retrofit Control1 and Retrofit Control2 columns. 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 Early Retirement	Early retirement of combined cycle unit
			Coal Early Retirement	Early retirement of coal unit
			CT Early Retirement	Early retirement of combustion turbine
			Mercury Control	ACI (Activated Carbon Injection)
			Mercury Control / Coal Early Retirement	ACI installation in early stage, then subsequent early retirement of coal unit
			O/G Early Retirement	Early retirement of oil/gas steam unit
			SCR	Selective Catalytic Reduction retrofit on coal steam unit
			SCR - O/G Steam	Selective Catalytic Reduction retrofit on oil/gas steam unit
			Scrubber	Scrubber retrofit on coal unit
			Scrubber / Mercury Control	Scrubber and ACI retrofit on coal unit
			Scrubber / SCR	Scrubber and SCR retrofit on coal unit
			Scrubber / SNCR	Scrubber and SNCR retrofit on coal unit
			SNCR	SNCR retrofit on coal unit
Fossil Unit?	T	Indicates whether a unit is fossil-fuel fired	Fossil Non-Fossil	
Summer Fuel Use (TBtu)	U	Projected fuel consumed (TBtu) at the unit in May - September during the year for which the run was parsed.	———	
Total Fuel Use (TBtu)	V	Projected fuel consumed (TBtu) at the unit during the year for which the run was parsed.	———	
Summer Subbituminous Fuel Use (TBtu)	W	These six columns give the projected coal consumption (TBtu), by coal rank, during the summer months (May - September) and the year for which the run was parsed.	———	
Total Subbituminous Fuel Use (TBtu)	X		———	

Field Name	Column	Definition	Key to Recurring Column Values
Summer Bituminous Fuel Use (TBtu)	Y		———
Total Bituminous Fuel Use (TBtu)	Z		———
Summer Lignite Fuel Use (TBtu)	AA		———
Total Lignite Fuel Use (TBtu)	AB		———
Summer NOx Emission (MTon)	AC	Projected NO_X (MTons) emitted from the unit during the summer months (May - September) and year round during the year for which the run was parsed.	———
Total NOx Emission (MTon)	AD		———
Total SO2 Emission (MTon)	AE	Projected annual SO_2 emissions (MTons) during the year for which the run was parsed.	———
Total CO2 Emission (MTon)	AF	Projected annual CO_2 emissions (MTons) during the year for which the run was parsed.	———
Total Mercury Emission (Ton)	AG	Projected annual mercury emissions (Tons) during the year for which the run was parsed.	———
Post Combustion Controls	AH	Summary of the SO_2, NO_X, and Mercury post-combustion controls installed at the unit during the run year.	———
Dispatchable FGD Control	AI	One-time option that allows certain generating units in the model to install a scrubber retrofit at zero capital cost. It applies to generating units known to have existing scrubbers that may not be operating because the original regulatory cause for their installation is no longer present. The model will use this retrofit if the control is economical to operate, but it will not use the retrofit if the control is not economical. This "dispatchable" construct allows modeling behavior in areas transitioning from a more stringent to less stringent regulatory regime (for example, a state affected by CAIR but potentially not affected by the proposed Transport Rule), where some operators may have economic incentive to bypass or reduce operation of a previously installed emission control, while other operators still need to operate the control in order to comply with settlements, state rules, or other past policies regardless of the status of the CAIR program. If a scrubber appears in columns Q, R, S, or AH, this field will indicate whether it was a "dispatchable" scrubber or not.	1 = unit has the dispatchable scrubber option <blank> = unit does not have the dispatchable scrubber option
Dispatchable NOx Control	AJ	One-time option that allows certain generating units in the model to install post-combustion NOx retrofit controls at zero capital cost. It applies to generating units known to have existing post-combustion NOx controls that may not be operating because the original regulatory cause for their installation is no longer present. The model will use this retrofit if the control is economical to operate, but it will not use the retrofit if the control is not economical. This "dispatchable" construct allows modeling behavior in areas transitioning from a more stringent to less stringent regulatory regime (for example, a state affected by CAIR but potentially not affected by the proposed Transport Rule), where some operators may have economic incentive to bypass or reduce operation of a previously installed emission control,	1 = unit has the dispatchable post-combustion NOx retrofit control option <blank> = unit does not have the dispatchable post-combustion NOx retrofit control option

Field Name	Column	Definition	Key to Recurring Column Values
		while other operators still need to operate the control in order to comply with settlements, state rules, or other past policies regardless of the status of the CAIR program. . If a post-combustion NOx retrofit control appears in columns Q, R, S, or AH, this field will indicate whether it was a "dispatchable" SCR or not.	
Dispatchable ACI Control	AK	One-time option that allows certain generating units in the model to install an ACI retrofit at zero capital cost. It applies to generating units known to have existing ACI installations that may not be operating because the original regulatory cause for their installation is no longer present. The model will use this retrofit if the control is economical to operate, but it will not use the retrofit if the control is not economical. This "dispatchable" construct allows modeling behavior in areas transitioning from a more stringent to less stringent regulatory regime, where some operators may have economic incentive to bypass or reduce operation of a previously installed emission control, while other operators still need to operate the control in order to comply with settlements, state rules, or other past policies regardless of the status of the original regulatory program. If an ACI installation appears in columns Q, R, or AH, this field will indicate whether it was a "dispatchable" ACI installation or not.	1 = unit has the dispatchable ACI option <blank> = unit does not have the dispatchable ACI option