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Nuclear and Fossil Steam Units

Sample Formula of Maintenance Adder for the Year 1998

$$CCTMD = (A_{CC} + B_{CC} - C_{CC})_{97} \times \frac{F_{98}}{F_{97}} + (A_{CC} + B_{CC} - C_{CC})_{96} \times \frac{F_{98}}{F_{96}} + \dots + (A_{CC} + B_{CC} - C_{CC})_{78} \times \frac{F_{98}}{F_{78}}$$

$$CCMA_{98} = \frac{CCTMD}{TFuel}$$

~~$$TMD = (A + B - C)_{97} \times \frac{F_{98}}{F_{97}} + (A + B - C)_{96} \times \frac{F_{98}}{F_{96}} + \dots + (A + B - C)_{78} \times \frac{F_{98}}{F_{78}}$$~~

$$TFuel = Fuel_{97} + Fuel_{96} + Fuel_{95} + \dots + Fuel_{78}$$

$$TSD = C_{97} \times \frac{F_{98}}{F_{97}} + C_{96} \times \frac{F_{98}}{F_{96}} + \dots + C_{78} \times \frac{F_{98}}{F_{78}}$$

$$TS = S_{97} + S_{96} + S_{95} + \dots + S_{78}$$

$$MA_{98} = \frac{TMD}{TFuel}$$

$$SMA_{98} = \frac{TSD}{TS}$$

Where:

TMD = Total Maintenance Dollars (for the Maintenance Period)

A = Total dollars in FERC Account 512 (FERC Account 530 for nuclear units).

B = Total dollars in FERC Account 513 (FERC Account 531 for nuclear units).



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Where:

- C = Costs included in FERC Accounts 512 and 513 (FERC Accounts 530 and 531 for nuclear units) that a company determines are start-up related.
- F = Escalation Factor for a particular year, as developed by the CDTF - based on Handy - Whitman Index. ([See Chronology of Maintenance Adder Escalation Index Numbers, exhibit 1.](#))
- TFuel = Total fuel burn or heat released (for same years as used in TMD).
- Fuel = Total annual fuel consumed (expressed in tons, barrels, gallons, or etc.) total annual heat released (expressed in MBTUs, etc.).
- TS = Total Starts
- TSD = Total Start maintenance Dollars
- S = Number of Starts per year.
- MA = Maintenance Adder (\$/unit of fuel or heat)
- SMA = Start Maintenance Adder (\$/start-up)

CATMD = Total incremental Configuration Addition Maintenance dollars (for the selected maintenance period)

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A_{CA} = Total incremental Configuration Addition dollars in FERC account 513 (FERC Account 531 for nuclear units)

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B_{CA} = Total incremental Configuration Addition dollars in FERC Account 512 (FERC Account 530 for nuclear units)

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C_{CA} = Total incremental Configuration Addition dollars in FERC Account 512 and 513 (FERC Account 530 and 531 for nuclear units) that a company determines are start-up related

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CAMA = Configuration Addition Maintenance Adder (\$/unit of fuel or heat)

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Comments:

- Total Maintenance Dollars (TMD) plus Total Start maintenance Dollars (TSD) cannot exceed Total dollars in FERC Accounts 512 and 513 (FERC Accounts 530 and 531 for nuclear units).
- Units with less than seven years of history are considered immature. Such units can be assigned their calculated MA and/or SMA, or a forecast value, subject to approval by the PJM MMU.

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CONFIGURATION ADDITION ADDER

For units undergoing a significant system or unit configuration addition the use of an additional "Configuration Addition Adder" may be included in the determination of the total maintenance adder. It is not intended to be used for upgrades to existing equipment (ie: replacement of a standard burner with a low NO_x burner).

Examples of significant system or unit configuration additions may include but are not limited to:

- Installation of Flue Gas Desulfurization (FGD or scrubber) systems
- Activated Carbon Injection (ACI) or other sorbent injection systems
- Installation of SCR or SNCR NO_x removal systems
- Conversion from open loop to closed loop circulation water systems
- Bag House addition
- Water injection for NO_x control
- Inlet Air Conditioning

The specific system or unit configuration system change would need to be reviewed by the MMU prior to approving the use of a configuration addition adder.

Calculation of the Configuration Addition Adder:

The configuration change adder is to be calculated in the same manner as the maintenance cost adder described in this section with the exception that the configuration addition total maintenance dollars (CCTMD) are only the incremental additional costs incurred as a result of the system or unit configuration change.

As with the current maintenance adder calculation, the adder for year (Y) uses the actual costs beginning with year (Y-1). Therefore, the first year of actual incremental additional expenses will be captured by the CAMA in the second year.

Following the initial year of use of the CAMA, each additional year's configuration addition maintenance cost will be incorporated into the configuration addition maintenance adder until the end of the historical maintenance cost period selected for the unit.

Reductions in Total Maintenance Costs:

While it is expected that the configuration addition adder will most often be used to cover step increases in maintenance costs, it is also to be used to capture step decreases in maintenance costs resulting from a significant system or unit configuration change that results in a significant reduction in maintenance costs. Any equipment that falls into disuse or is retired because of the configuration change must have its maintenance expenses removed from the historical record used to develop the maintenance adder. An example of a significant system or unit configuration change that may result in a step decrease in qualified maintenance costs includes, but is not limited to, a fuel change from coal to gas fuel.

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