Manual 15
Biennial Review Changes

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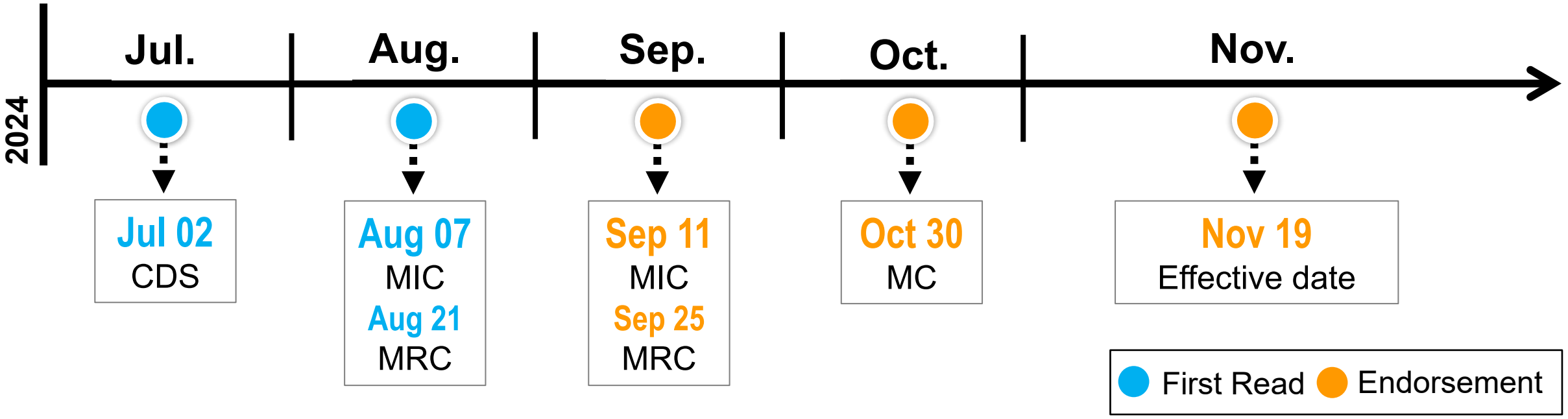
M-15 Biennial review

Action Required	Deadline	Who May Be Affected
Review Manual 15 updates	**08/21/2024**	Market Sellers

Review/Endorsement Timeline



Summary of Biennial Review Changes

- Throughout - Standardize No Load, noload, No – Load, etc. to no-load
- 2.6.11 - Remove table of original VOM default values to avoid confusion
- Update numbering of sections 3.3.1, 3.3.2, 4.3.1, 6.3.1, 6.3.2, 7.3.1
- 2.4, 4.4, 5.4, 6.4 – Remove the extra "+" from the of the Startup Cost formula and change TRFC to TFRC
- 6.4 - Remove blank Note: box
- 7.2 - Remove ()(), fix errant "(", fix summation notation
- 11.2.1 - Correct the fuel cost formula by changing the multiplication to division
- 13.3 - Remove "Name to be determined" from Exhibit 26
- Att. B - Update graphs to have appropriate Y-axis labels

2.6.11 Default Adders

A Market Seller may elect to utilize a default minor maintenance adder or submit unit-specific minor maintenance costs to the Office of Interconnection and the Market Monitoring Unit. All maintenance costs on a unit-specific basis must be submitted to the Office of Interconnection and the Market Monitoring Unit.

A Market Seller may include a default operating costs adder in the cost-based energy offer in lieu of submitting unit-specific operating costs for review and approval.

~~The default adders are as follows:~~

Technology Type	Default Minor Maintenance Adder ($/MWh)	Default Operating Costs Adder ($/MWh)
Combined Cycle	0.98	0.40
Combustion Turbine	3.59	0.75
Reciprocating Engine	4.03	1.62
Fossil Steam	1.71	2.87

The default adders ~~shown above~~ shall be escalated annually utilizing the Handy-Whitman Index and shall be posted annually by the Office of Interconnection. The default adders may not be utilized by a Market Seller prior to the expiration of a unit-specific maintenance adder or operating costs adder previously approved by the Office of Interconnection.

Sections 3.3.1, 3.3.2, 4.3.1, 6.3.1, 6.3.2, 7.3.1

Renumber previously mis-numbered sections

3.2 Fuel Cost

Note:
The information in Section 2.2 contains basic Fuel Cost information relevant for all unit types. The following information only pertains to nuclear units.

3.3.1 Basic Nuclear Fuel Cost

Basic Nuclear Fuel Cost -Basic nuclear fuel cost shall be based on the dollars in FERC Account 518, less in-service interest charges (whether related to fuel that is leased or capitalized). This quantity shall be calculated in units of dollars per MMBtu, as forecast for the applicable fuel cycle.

$$BasicNuclearFuelCost\ (\$/MMBtu) = \frac{(Dollars\ in\ FERC\ Account\ 518 - InterestCost)}{Fuel\ Cycle\ Heat\ Input\ (MMBtu)}$$

See definition in FERC account 518 in Attachment A, A2.5

3.3.2 Total Fuel-Related Costs for Nuclear Units

Note:

$$TotalFuelRelatedCostsforNuclearUnits = BasicNuclearFuelCost + MaintenanceAdder$$

3.3 Incremental Energy Cost

Note:
The information in Section 2.3 contains basic Incremental Energy Cost information relevant for all unit types. The following information only pertains to nuclear units.

Sections 2.4, 4.4, 5.4 & 6.4

Change to TFRC

$$Start\ up\ Cost\ (\$/Start) =$$

$$[Start\ Fuel\ Consumed\ (MMBtu/Start) * TRFC\ (\$/MMBtu) * Performance\ Factor] +$$

$$[Station\ Service\ (MWh) * Station\ Service\ Rate\ (\$/MWh)] +$$

$$+ Start\ Maintenance\ Adder\ (\$/Start) +$$

Section 6.4

Note:

Move up to correct location

)

$$Pumping\ Power\ Cost\left(\frac{\$}{MWh}\right) = \left(\frac{\sum_{168}^{1} Real\ Time\ LMP\left(\frac{\$}{MWh}\right) * Pumping\ Power\ (MWh)}{\sum_{168}^{1} Pumping\ Power\ (MWh)}\right)$$

$$Pumped\ Storage\ Fuel\ Cost\ (\$/MWh) = \frac{Pumping\ Power\ Cost\ (\$/MWh)}{Pumping\ Efficiency}$$

Correct the notation

UPPER LIMIT
$\sum$
LOWER LIMIT

Change to division

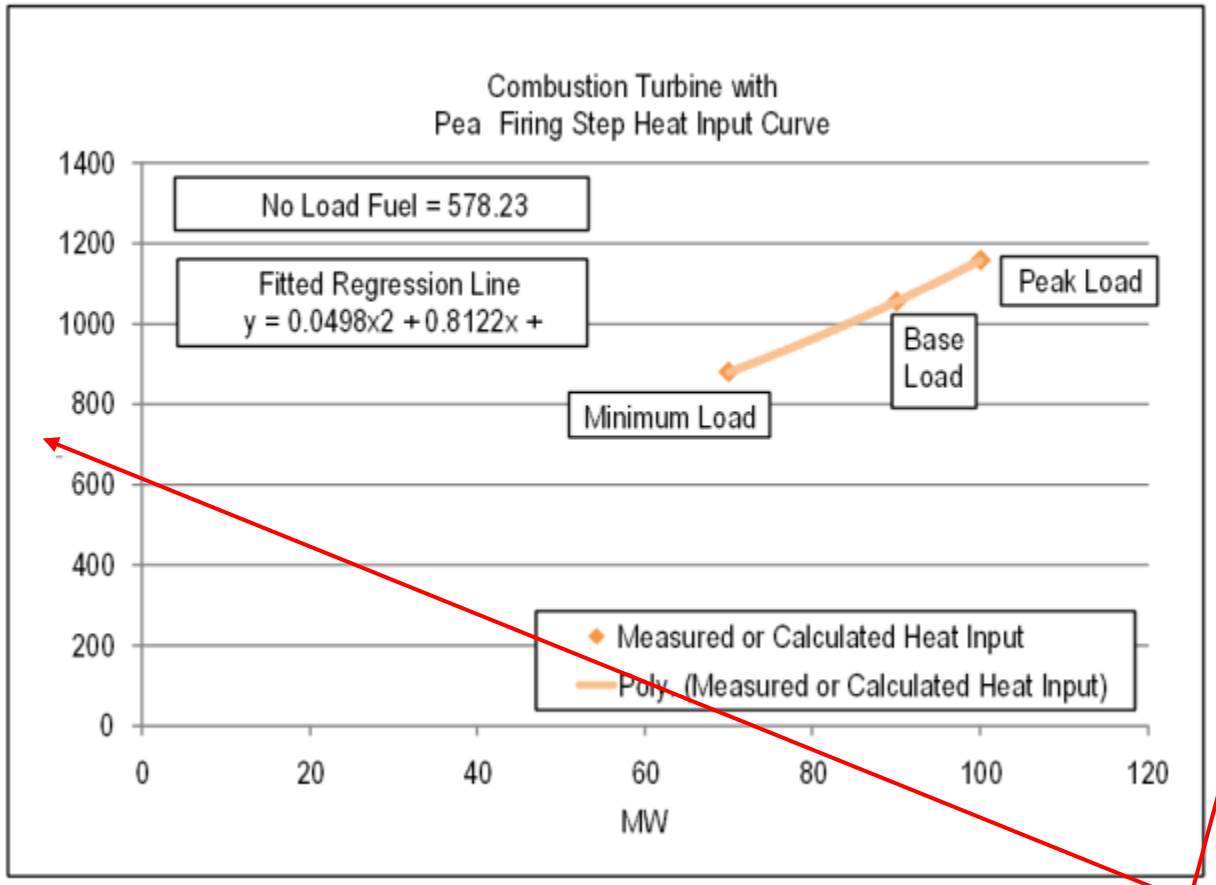
$$Fuel\ Cost\ \left(\frac{\$}{MWh}\right) = \left(average\ charge\ cost\ \left(\frac{\$}{MWh}\right) * efficiency\ factor\right)$$

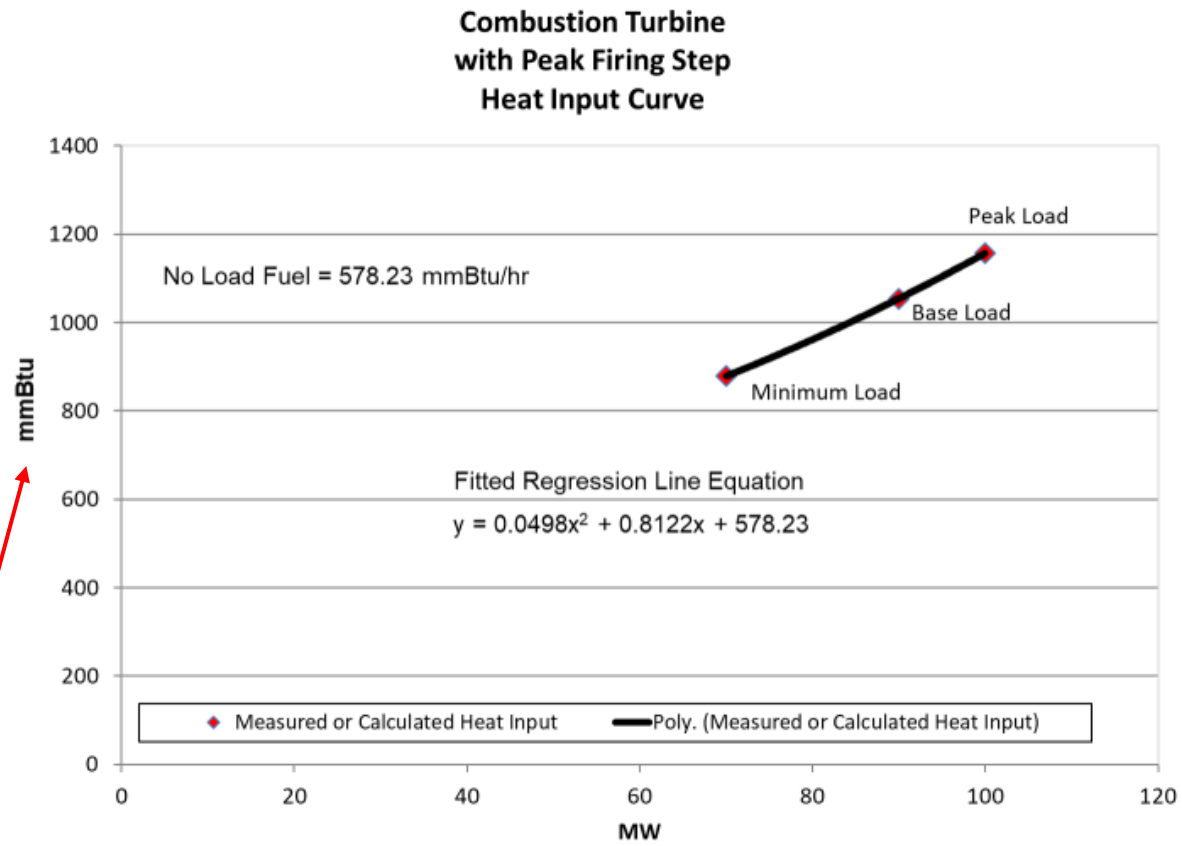
Debt Interest Rate Example Calculation

	Value
Most recent Net CONE ATWACC	**8% (2018 value)**
(Current year -2) Moody Utility Index	**4.68%**
Current year Moody Utility Index	**3.5%**
Current year CRF Debt Interest Rate	**ATWACC + (only if greater than 200 basis points) [2020 Moody Utility index – 2018 Moody Utility Index]**
Current year CRF Debt Interest Rate	**8.0% + (only if greater than 200 basis points) [3.5% - 4.68%] = 8%**

~~*Exhibit 26: Name to be determined*~~

Attachment B





Replace any graphs with missing Y-axis labels

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