

Mileage Ratio Issue

MIC

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IMM



Monitoring Analytics

Regulation Mileage Issue

- **The IMM proposes a cap of 5.5 on the realized mileage ratio in all hours.**
- **The cap would eliminate the current undefined mileage ratio result.**
- **The cap would reduce the market distortion that results from the use of mileage ratios when they incorrectly represent regulation output.**
- **Based on data from January 1, 2020, through March 31, 2021 this cap would affect about 50 percent of hours.**



Regulation Mileage Issue

- **RegA resources are paid (on a performance score adjusted basis):**
 - **RegA MW x RMCCP + RegA MW x RMPCP.**
- **RegD resources are paid (on a performance score adjusted basis):**
 - **(RegD MW x RMCCP) + [(RegD MW x RMPCP) x Mileage Ratio].**
 - **Mileage Ratio = (Mileage of RegD)/(Mileage of RegA)**

Regulation Mileage Issue

- **RegA and RegD signals are interdependent.**
- **Reg A moves to maintain ACE and to support the 30 minute conditional neutrality of RegD.**
- **The RegD signal is set equal to the difference between ACE and RegA**
- **The combination of the RegA and RegD signal maintains ACE.**
- **There are times when the RegA signal is for max output (pegging) while RegD signal moves.**



Regulation Mileage Issue

- **The RegA signal to support the conditional neutrality of RegD can cause large and/or undefined values for the mileage ratio (mileage D/mileage A).**
- **When RegA is pegged for a full hour (mileage of Reg A = 0), the mileage ratio is undefined.**
- **Mileage ratio is also distorted when RegA is not pegged for full hour.**



Regulation Mileage Issue

- **The mileage ratio is not a measure of relative work done for purposed of supporting ACE control, as the full interaction between the A and D signals controls ACE.**
- **When pegged, RegA is supporting ACE control (per the signal design) and it also supporting the conditional neutrality of the RegD signal.**



Regulation Mileage Issue

- **The relative contribution to regulation is measured by the MRTS or MBF, not the mileage ratio.**
- **The MRTS/MBF is used for the relative valuation of the RegA and RegD in the market clearing and the setting of price, but not the market settlement.**



Mileage Ratio Statistics: January 1, 2020, to March 31, 2021 (Cap at 1.0)

Full Range Statistics (no limits or caps on mileage or mileage ratios)						
	RegA	RegD	Mileage		\$/Reg A	\$/Reg D
Metric	Mileage	mileage	Ratio	MBF	MW	MW
Minimum	0.00	1.29	0.65	0.65	0.00	0.00
Maximum	14.29	59.71	9,999.00	1.94	967.86	969.97
Median	5.29	29.13	5.47	0.94	9.57	12.46
Mean	5.43	29.08	7.39	0.71	13.65	16.71
Statistics if Max Mileage Ratio Limited to				1		
	RegA	RegD	Mileage		\$/Reg A	\$/Reg D
Metric	Mileage	mileage	Ratio	MBF	MW	MW
Minimum	0.00	1.29	0.65	0.65	0.00	0.00
Maximum	14.29	59.71	1.00	1.94	967.86	967.86
Median	5.29	29.13	1.00	0.94	9.57	9.57
Mean	5.43	29.08	1.00	0.71	13.65	13.66

Percent of Hours
Affected 99.99%

Mileage Ratio Statistics: January 1, 2020, to March 31, 2021 (Cap at 5.5)

Full Range Statistics (no limits or caps on mileage or mileage ratios)						
	RegA	RegD	Mileage		\$/Reg A	\$/Reg D
Metric	Mileage	mileage	Ratio	MBF	MW	MW
Minimum	0.00	1.29	0.65	0.65	0.00	0.00
Maximum	14.29	59.71	9,999.00	1.94	967.86	969.97
Median	5.29	29.13	5.47	0.94	9.57	12.46
Mean	5.43	29.08	7.39	0.71	13.65	16.71
Statistics if Max Mileage Ratio Limited to				5.5		
	RegA	RegD	Mileage		\$/Reg A	\$/Reg D
Metric	Mileage	mileage	Ratio	MBF	MW	MW
Minimum	0.00	1.29	0.65	0.65	0.00	0.00
Maximum	14.29	59.71	5.50	1.94	967.86	969.53
Median	5.29	29.13	5.47	0.94	9.57	12.02
Mean	5.43	29.08	4.87	0.71	13.65	16.22

Percent of Hours

Affected 49.66%

PJM's Proposal

- **PJM proposes to replace the RegA mileage with a value of 0.1 in hours where the RegA mileage for the hour is zero.**
- **The PJM proposal would not reduce the market distortion that results from the use of mileage ratios when they incorrectly represent regulation output.**
- **Based on data from January 1, 2020, through March 31, 2021 the PJM proposal would have allowed a RegA mileage ratio of 673.05.**

Mileage Ratio Statistics: January 1, 2020, to March 31, 2021 (RegA mileage set to 0.1 when RegA mileage = 0)

Full Range Statistics (no limits or caps on mileage or mileage ratios)						
From January	RegA mileage	RegD mileage	Mileage ratio	MBF	\$/RegA MW	\$/RegD MW
MIN	0.00	1.29	0.65	0.65	0.00	0.00
MAX	14.29	59.71	9,999.00	1.94	967.86	969.97
MEDIAN	5.29	29.13	5.47	0.94	9.57	12.46
MEAN	5.43	29.08	7.39	0.71	13.65	16.71
Statistics if RegA Mileage set to 0.1 when RegA mileage = 0						
From January	RegA mileage	RegD mileage	Mileage ratio	MBF	\$/RegA MW	\$/RegD MW
MIN	0.03	1.29	0.65	0.65	0.00	0.00
MAX	14.29	59.71	673.05	1.94	967.86	969.97
MEDIAN	5.29	29.13	5.47	0.94	9.57	12.46
MEAN	5.43	29.08	6.49	0.71	13.65	16.71
Percent of Hours Affected						
	0.01%					

Monitoring Analytics, LLC

2621 Van Buren Avenue

Suite 160

Eagleville, PA

19403

(610) 271-8050

MA@monitoringanalytics.com

www.MonitoringAnalytics.com

