

Congestion Severity Index

The lists on the following tabs are sorted by the Congestion Severity Index of the constraints. The Congestion Severity Index is based on the theoretical potential maximum number of dollars paid into the market by load serving entities due to congestion on the constraint in question. It is the maximum potential amount of money (in millions of dollars) that could have been saved over the course of this time period had the constraint not been bound. Both directions of the constraint are captured (there are a few constraints in ATC that have been bound in different directions at different times).

Hours

The "hours" measurements provided on the table is a measure duration of constraint binding. The number given is the total number of "hours" that the constraint occurred. RT data may have partial hours since RT constraints are bound in five minute intervals.

Day Ahead and Real Time

Day Ahead (DA) constraints indicate that MISO committed generation out of economic order in the Day Ahead market, meaning that more expensive generation is committed for the next day in order to avoid constraints that would occur if only the cheapest generation was scheduled to run. Real Time (RT) constraints show up when MISO did not anticipate overloads on the system in the Day Ahead market. Adjustments must be made to the generation mix during the operating day in order to mitigate constraints.

Potential Solution

Potential solutions have been provided for some constraints listed. These solutions may not have been designed for the sole purpose of alleviating the listed constraints and therefore will not necessarily fully mitigate the constraints, but will reduce the constraint's frequency and severity under normal operating conditions.

Severity Index	Hours	Constraint	Potential Solution
4.73	962	Total for all ATC Day Ahead constraints - March 2011	Solutions listed in ATC TYA unless otherwise noted
1.75	112	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161 kV line (Proposed, 2013) North La Crosse - Madison 345 kV line (Provisional 2018)
0.77	325	Flow South PTDF	Flow Control Device (Provisional, 2014)
0.54	46	Pleasant Prairie - Zion 345 kV flo Cherry Valley - Silver Lake 345 kV (ComEd)	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.52	77	Lakeview - Zion 138 kV flo Zion - Arcadian 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.47	94	Indian Lake 138/69 kV Transformer T2 flo Indian Lake 138/69 kV Transformer T1	Flow Control Device (Provisional, 2014)
0.36	196	Nordic - Felch Tap 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Provisional, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.17	22	Kewaunee 345/138 kV Transformer T10 flo Point Beach - Forest Junction 345 kV	Area Generation outages may have contributed to this constraint
0.06	9	Kenosha - Lakeview 138 kV flo Arcadian - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.05	3	Pleasant Prairie - Zion 345 kV flo Zion - Arcadian 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.02	2	North Fond Du Lac - Aviation 138 kV flo Butte Des Mortes - Neevin 138 kV	Area Generation outages may have contributed to this constraint
0.02	17	Straits - Pine River 69 kV flo Hiawatha 138/69 kV Transformer T1	Flow Control Device (Provisional, 2014)
0.01	2	Granville - Butler 138 kV flo Granville - Tosa 138 kV	2011 Congestion Analysis Area Transmission outages may have contributed to this constraint
0.01	4	Arcadian 345/138 kV Transformer T3 flo Arcadian 345/138 kV Transformer T2	Replace Arcadian Transformers T2 and T3 (Provisional 2015)
0.00	7	Straits - Evergreen 69 kV flo Straits - Pine River 69 kV	Flow Control Device (Provisional, 2014)
0.00	4	McGulpin - Straits 138 kV ckt 3 flo McGulpin - Straits 138 kV ckt 1	Flow Control Device (Provisional, 2014)
0.00	3	Manrap - Custer 69 kV	Shoto - Custer 138 kV line (Provisional, 2020)
0.00	2	Indian Lake 138/69 kV Transformer T1	Flow Control Device (Provisional, 2014)
0.00	2	Roberts - Newberry 69 kV	
0.00	1	Evergreen - Pine River 69 kV flo Straits - Hiawatha 138 kV + Hiawatha 138/69 kV Transformer T1 and T2	Flow Control Device (Provisional, 2014)
0.00	34	Manistique Transformer T1	No solution - virtual activity causing congestion

* This project not part of the ATC 10-Year Assessment

1. This constraint may have been bound for other contingencies as well.

Severity Index	Hours	Constraint	Potential Solution
4.00	116	Total for all ATC Real Time constraints - March 2011	Solutions listed in ATC TYA unless otherwise noted
1.78	17	Indian Lake 138/69 kV Transformer T2 flo Indian Lake 138/69 kV Transformer T1	Flow Control Device (Provisional, 2014)
0.90	41	Lakeview - Zion 138 kV flo Zion - Arcadian 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.76	2	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161 kV line (Proposed, 2013) North La Crosse - Madison 345 kV line (Provisional 2018)
0.28	4	Bluemound - Butler 138 kV (5051) flo Elm Road - Arcadian 345 kV	Area Transmission outages may have contributed to this constraint
0.27	51	Nordic - Felch Tap 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Provisional, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.01	0	Arcadian 345/138 kV Transformer T3 flo Pleasant Prairie - Zion 345 kV	Replace Arcadian Transformers T2 and T3 (Provisional 2015)

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Day Ahead Hours Vs. Congestion Severity



