

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
7.61	1,159	Total for all ATC Day Ahead constraints - February 2011	Solutions listed in ATC TYA unless otherwise noted
2.55	193	Pleasant Prairie - Zion 345 kV flo Cherry Valley - Silver Lake 345 kV (ComEd)	Upgrade substation equipments at Zion substation in ComEd system (Planned, 2011) Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
1.47	93	Pleasant Prairie - Zion 345 kV flo Zion - Arcadian 345 kV	Upgrade substation equipments at Zion substation in ComEd system (Planned, 2011) Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
1.46	95	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161 kV line (Proposed, 2013) North La Crosse - Madison 345 kV line (Provisional 2018)
1.00	537	Nordic - Felch Tap 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.39	24	Granville - Butler 138 kV flo Granville - Tosa 138 kV	Area Transmission outages may have contributed to this constraint 2011 Congestion Analysis
0.37	73	Lakeview - Zion 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.33	108	Flow South PTFD	Flow Control Device (Proposed, 2014)
0.02	9	McMillan - Wildwood 115 kV flo Arpin - Rocky Run + Port Edwards SPS 345 kV	Improve clearance on McMillan - Wildwood 115 kV (Planned, 2011)
0.01	14	Cornell - Chandler 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014)
0.00	3	Ontonagon 138/69 kV Transformer flo Mass - Victoria 69 kV	ATC Michigan Energy Collaborative investigating potential solutions (2011)*
0.00	5	Indian Lake 138/69 kV Transformer T1	Flow Control Device (Proposed, 2014)
0.00	3	Tone Tap - Rudyard Tap 69 kV flo Pine River - Nine Mile 69 kV	Area Transmission outages may have contributed to this constraint
0.00	1	Plains - Arnold 138 kV flo Dead River - Plains 345 kV + Mine Load	Area Transmission outages may have contributed to this constraint
0.00	1	Detour Transformer T2	No solution - virtual activity causing congestion

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

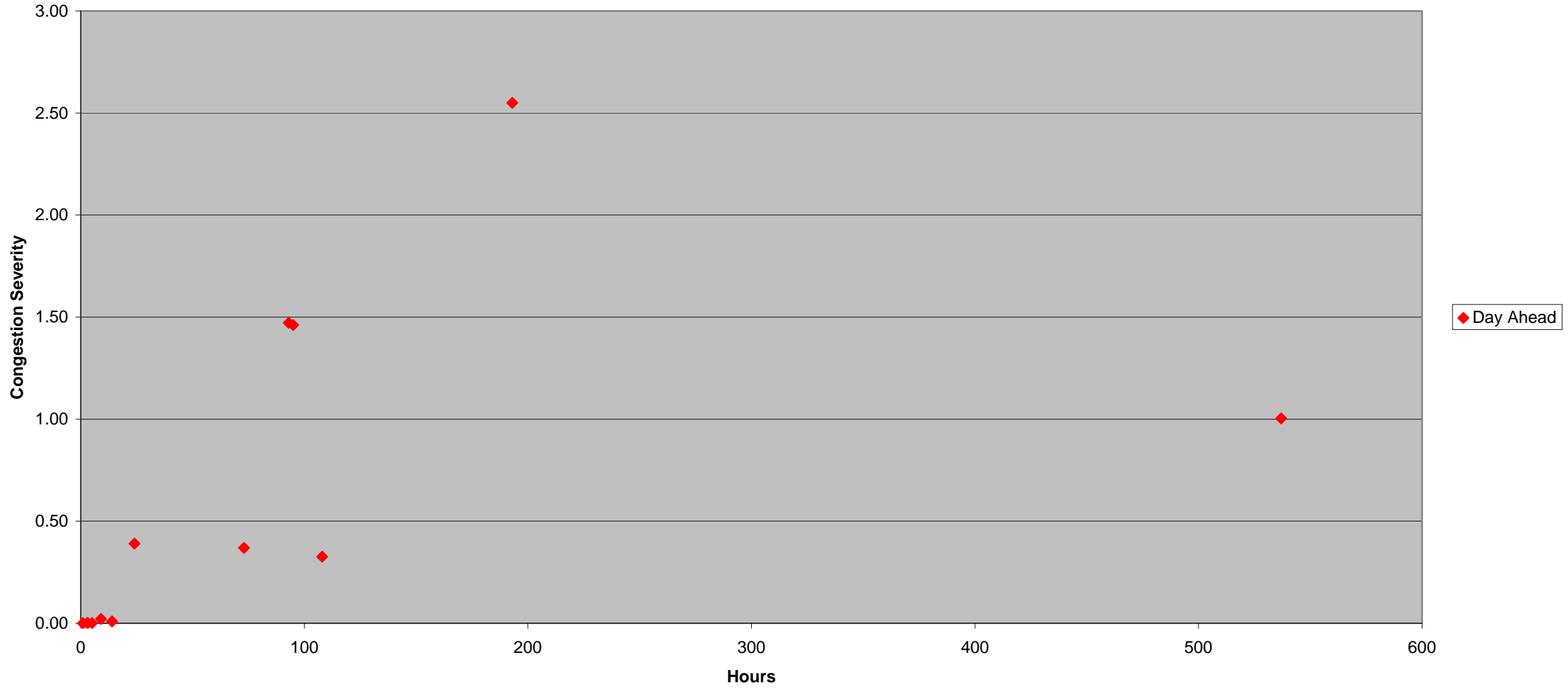
1. This constraint may have been bound for other contingencies as well.

Severity Index	Hours	Constraint	Potential Solution
6.75	161	Total for all ATC Real Time constraints - February 2011	Solutions listed in ATC TYA unless otherwise noted
3.25	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)
0.84	114	Nordic - Felch Tap 69 kV flo Chandler 138/69 kV Transformer T1	Arnold 345/138 kV Transformer (Provisional, 2015) Flow Control Device (Proposed, 2014) Second Chandler 138/69 kV Transformer (Proposed, 2012)
0.82	9	Pleasant Prairie - Zion 345 kV flo Zion - Arcadian 345 kV	Upgrade substation equipments at Zion substation in ComEd system (Planned, 2011) Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.67	21	Lakeview - Zion 138 kV flo Pleasant Prairie - Zion 345 kV	Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.62	7	McMillan - Wildwood 115 kV flo Arpin - Rocky Run 345 kV + Port Edwards SPS	Improve clearance on McMillan - Wildwood 115 kV (Planned, 2011)
0.52	1	Pleasant Prairie - Zion 345 kV flo Cherry Valley - Silver Lake 345 kV (ComEd)	Upgrade substation equipments at Zion substation in ComEd system (Planned, 2011) Pleasant Prairie - Zion Energy Center 345 kV line* (economic analysis 2011)
0.02	7	Verona - Oregon 69 kV flo Kegonsa 138/69 kV Transformer T31	Area Transmission outages may have contributed to this constraint

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

Day Ahead Hours Vs. Congestion Severity



Real Time Hours Vs. Congestion Severity

