

Table ZS-5
ATC Day Ahead Market Most Limiting Elements, 2008

Severity Index	Hours (hits)	Constrained Element	Potential Solution
40.39	1,847	Paddock 345/138 kV Transformer T21	Paddock - Rockdale 345 kV (Planned 2010)
19.48	408	Pleasant Prairie - Zion 345 kV	TBD*
17.41	519	Point Beach - Sheboygan 345 kV	Point Beach - Sheboygan 345 kV line uprate (2010)
8.25	221	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County-Council Creek 161 kV (Proposed 2012)**
8.04	915	Whitcomb - Caroline 115 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
5.76	205	Ellington - Hintz 138 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
5.18	166	Granville 345/138 kV Transformer T1	Install second 345/138 kV transformer at Oak Creek (Planned, 2009)
4.51	78	Bluemound 230/138 kV Transformer T3	Install second 345/138 kV transformer at Oak Creek (Planned, 2009)
4.11	93	Kelly - Whitcomb 115 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
4.02	204	Hintz - Werner 138 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
3.80	163	Arpin - Sigel 138 kV	Arrowhead - Gardner Park 345 kV (Completed 2008) Monroe County-Council Creek 161 kV (Proposed 2012)**
3.75	351	Dewey (CW8) - Weston 115 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
3.43	47	Rocky Run - Plover 115 kV	Morgan - Highway 22 - Werner West 345 kV line (Planned 2009)
3.18	44	Pleasant Valley - Arthur Road 138 kV	Reconductor Saukville - Pleasant Valley – Arthur Road - St. Lawrence 138 kV (Completed 2008)
3.09	134	Eau Claire - Arpin 345 kV	Arrowhead - Gardner Park 345 kV (Completed 2008) Monroe County-Council Creek 161 kV (Proposed 2012)**
177.13	18,295	Total for all ATC Day Ahead constraints - 2008	

* Additional potential solution being studied as part of 2009 Economic Analysis process: Bain - Zion 345 kV line

** Additional potential solutions being studied as part of 2009 Economic Analysis process: N. LaCrosse - Cardinal kV & Salem - Cardinal 345 kV

Table ZS-6
ATC Real Time Market Most Limiting Elements, 2008

Severity Index	Hours (hits)	Constrained Element	Potential Solution
45.13	376	Paddock 345/138 kV Transformer T21	Paddock - Rockdale 345 kV (Planned 2010)
15.58	133	Point Beach - Sheboygan 345 kV	Point Beach - Sheboygan 345 kV line uprate (Proposed 2010)
13.26	119	Pleasant Prairie - Zion 345 kV	TBD*
11.37	87	Eau Claire - Arpin 345 kV	Arrowhead - Gardner Park 345 kV (Completed 2008) Monroe County-Council Creek 161 kV (Proposed 2012)**
11.06	407	Whitcomb - Caroline 115 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
9.05	71	Ellington - Hintz 138 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
7.30	19	Southeast Wisconsin Interface	TBD*
5.54	30	Stone Lake - Gardner Park 345 kV	Monroe County-Council Creek 161 kV (Proposed 2012)**
4.08	112	Arpin - Sigel 138 kV	Arrowhead - Gardner Park 345 kV (Completed 2008) Monroe County-Council Creek 161 kV (Proposed 2012)**
3.36	26	Rocky Run 345/115 kV Transformer T4	Gardner Park - Highway 22 - Werner West 345 kV (Planned 2009) Monroe County-Council Creek 161 kV (Proposed 2012)
3.36	37	Paddock - Town Line Road 138 kV	Paddock - Rockdale 345 kV (Planned 2010)
3.33	40	Granville - Butler 138 kV	Elm Rd. Phase 1 (Expected 2009)
3.22	131	Badger 138/115 kV Transformer T1	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
3.20	23	Granville 345/138 kV Transformer T1	Install 2nd 345/138 kV transformer at Oak Creek (Planned, 2009)
2.89	11	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County-Council Creek 161 kV (Proposed 2012)**
179.87	3,101	Total for all ATC Real Time constraints - 2008	

* Additional potential solution being studied as part of 2009 Economic Analysis process: Bain - Zion 345 kV line

** Additional potential solutions being studied as part of 2009 Economic Analysis process: N. LaCrosse - Cardinal 345 kV & Salem - Cardinal 345 kV

