

**Ad Hoc 2004 Summer Sensitivity Study of Wisconsin CA-to-CA transfer capabilities  
2/3/2004**

The following tests were performed on short notice (less than 1 day) to test the sensitivities of Wisconsin CA-to-CA transfer capabilities.

Model used: Recent MISO Monthly AFC model for July 2004, built and posted 01/15/2004. Case includes some known ATCLLC corrections.

Tested directions: Combinations of transfer between the control areas ALTE, WEC, WPS, MGE, UPPC. Simulations were based on MUST DC analysis results.

Sensitivities: Alternate versions of the case were test with an additional 300 MW of transfer. The 300 MW represents a level approximately equivalent to 1 year of load growth within Wisconsin. A description of the sensitivities is listed below.

Import 300 MW to scaled up WI load  
Import 300 MW to scaled down WI generation  
300 MW of internal generation to load

- For each 300 MW transfer, a load ratio share was assigned to each CA.
- For the increased WI imports, it is assumed that 75% will come from the south (CE), and 25% from the West (MHEB).
- For imports to generation, economic unit load ordering was considered.
- For increased WI generation, economic unit load ordering was considered.

Results: Results of the transfer capabilities were summarized a tabular form. Only the first most limiting facilities were identified for each direction. The numbers were compared to show how the additional test transfers affected the CA-to-CA transfer. Plots for each control area indicate base case flow vs. incremental change in flow for each of the previously stated modeling conditions.

Considerations:

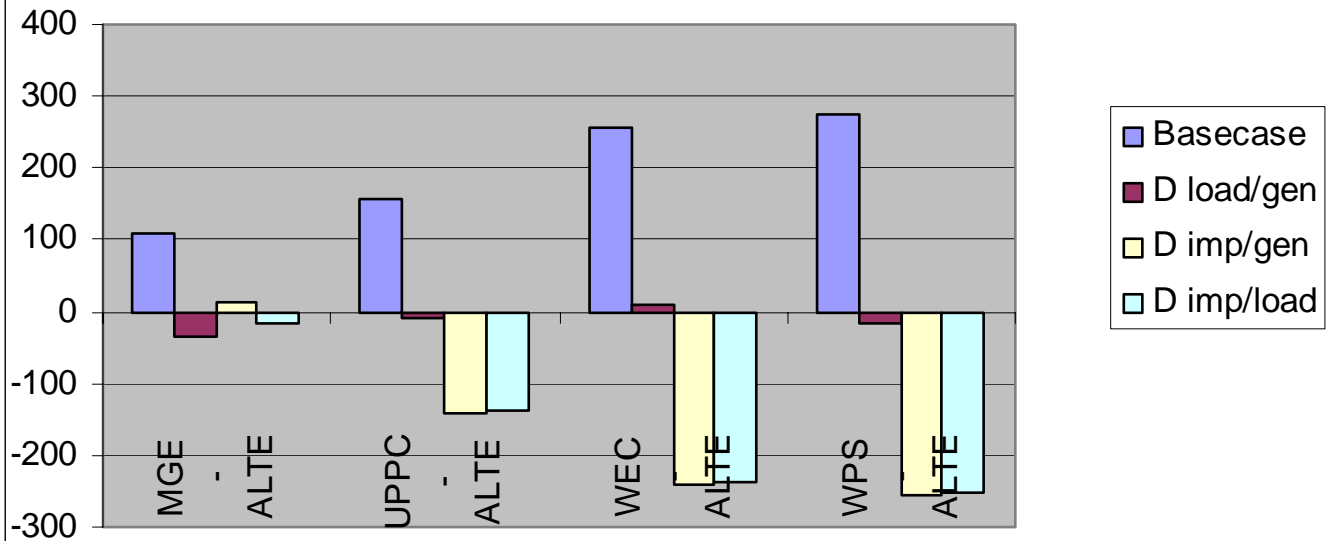
Voltage stability limits were not tested as part of the DC analysis.

Generation outages were not reported since in the DCC analysis they skew WI imports by interacting with the system (i.e. Weston)

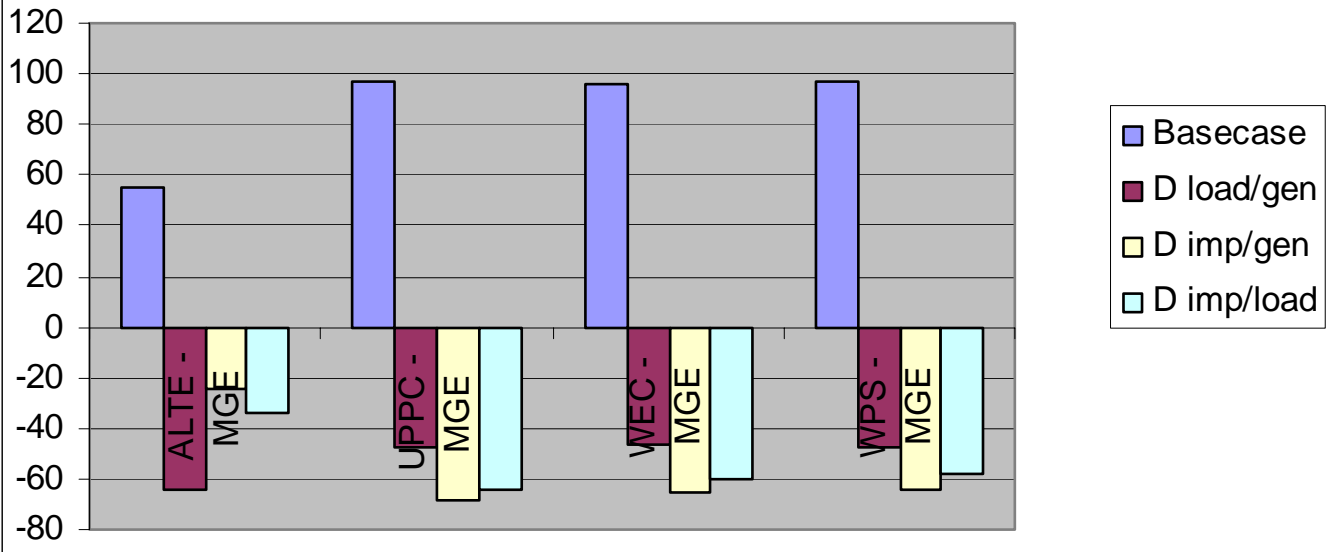
A 3% TRM on ratings was assumed for the 2004 summer period.

DIRECTION	Basecase	load/gen	$\Delta$ load/gen	imp/gen	$\Delta$ imp/gen	imp/load	$\Delta$ imp/load
MGE - ALTE	110	76	-34	125	15	96	-15
UPPC - ALTE	158	148	-10	17	-141	20	-138
WEC - ALTE	258	266	8	18	-240	21	-237
WPS - ALTE	276	260	-16	19	-257	22	-254
ALTE - MGE	55	-10	-65	31	-24	21	-34
UPPC - MGE	97	49	-48	28	-69	33	-64
WEC - MGE	95	49	-47	30	-65	35	-60
WPS - MGE	97	50	-48	33	-64	39	-58
ALTE - UPPC	-178	-226	-48	-250	-72	-246	-68
MGE - UPPC	-444	-498	-54	-290	154	-252	192
WEC - UPPC	-215	-280	-65	-303	-88	-298	-83
WPS - UPPC	-209	-266	-57	-293	-84	-288	-79
ALTE - WEC	-15	-46	-31	-56	-42	-75	-60
MGE - WEC	-506	-569	-63	-331	175	-581	-75
UPPC - WEC	160	149	-10	169	9	153	-7
WPS - WEC	1000	1000	0	1000	0	1000	0
ALTE - WPS	225	-43	-267	-124	-349	193	-32
MGE - WPS	-708	-780	-72	-480	228	-813	-105
UPPC - WPS	159	148	-11	169	10	152	-7
WEC - WPS	639	599	-40	622	-16	590	-49

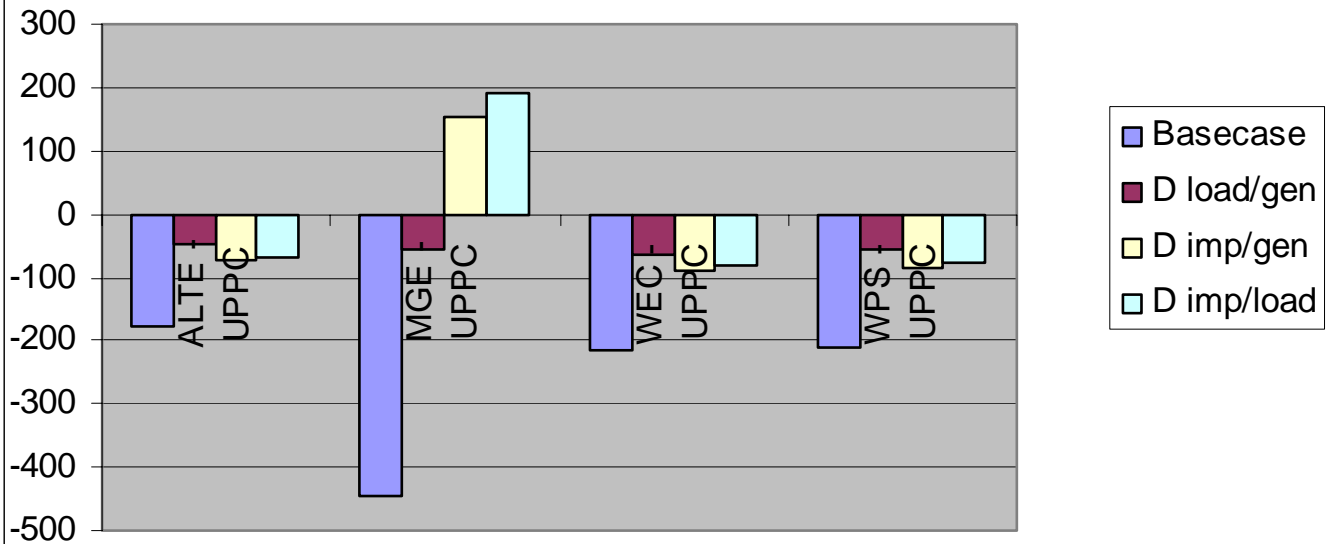
### ALTE Imports



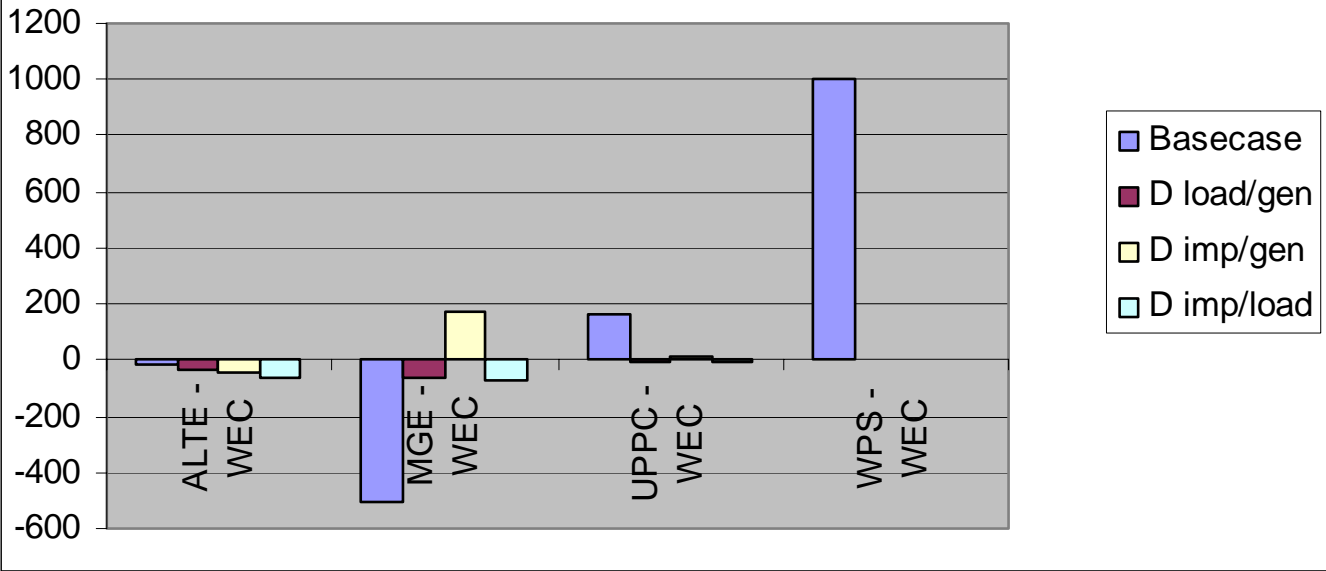
### MGE Imports



### UPPC Imports



### WEC Imports



### WPS Imports

