



Access Initiative

Correlate TLR activity to Affected WUMS Import Directions

Updated with suggestions and data through 8/4/2004

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(data prepared by Pat Shanahan)



Updates Since Mid-YR Report

- **Updates:**

- Data processed through August 4th (midday)
- Only selected source directions were examined for the mid-YR. (sourcing from AEP, ALTE, AMRN, CE, CIN, MECS, MGE, NSP, TVA, WEC, WPS)
- Added additional directions: [sourcing from ALTW, MEC, and MPW](#)
 - This was done to capture some additional reporting on Lore-Turkey River limits
- Improve annotation on some plots
- Added some additional information relating to on-peak/off-peak



Objective/Data Sources

- **Objective:**
 - Determine the correlation between TLR activity and the comparability of WUMS import directions held ($\geq 5\%$) by the TLRs.
- **Data Sources:**
 - All data publicly available data to the industry
 - TLR activity from the NERC CRC log
 - Since 1/1/04, ATCLLC has been attempting to FTP Transaction Distribution Factors (TDFs) from the NERC web site. (Missing hours are interpolated)



Task

- **Task:**
 - Process the raw data (18+ Giga-Bytes)
 - Calculate TDFs from raw data based on TDFs to Reference (I.e $TDF_{12} = TDF_1 - TDF_2$)
 - Match TDF data to appropriate NERC CRC TLR activity (for selected directions)
 - Focus results on direction where TDF's are $\geq 5\%$
 - Determine a condensed reporting method for interpreting the results.

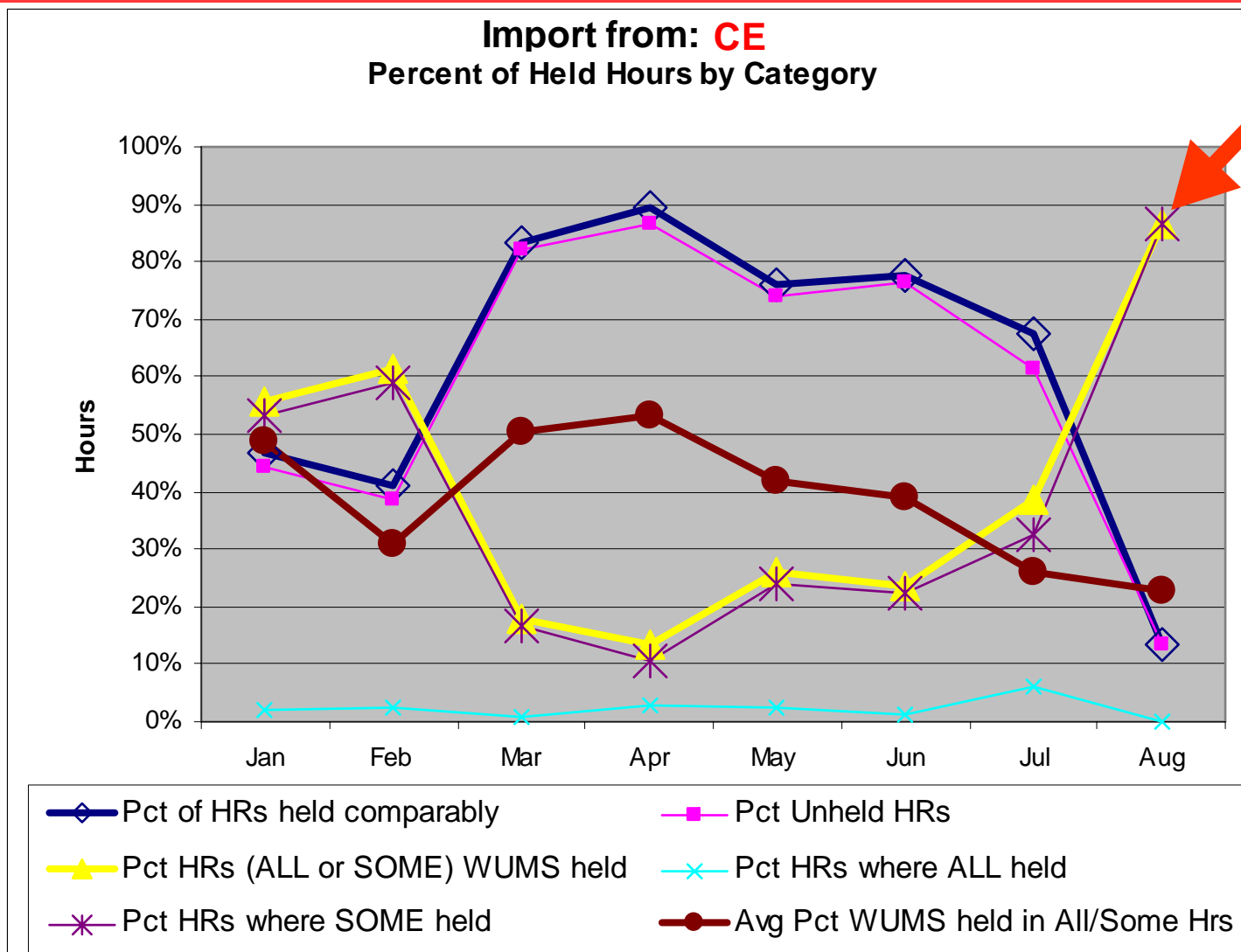


Reports

- **Reports:**
 - Graphics showing the amount of TLR activity that affected WUMS import directions
 - Graphics showing how the WUMS CA's compare when WUMS import directions are affected $\geq 5\%$.
 - List of Flowgates showing the YTD number of hours it affected the import ability for each WUMS CA. (at least 1 import direction $\geq 5\%$ for each CA)
 - List of Flowgates showing, for each import direction, the number of hours in each month that it affected the import capability of at least one WUMS CA.



TLR Activity – Import Capability from CE



WUMS directions affected

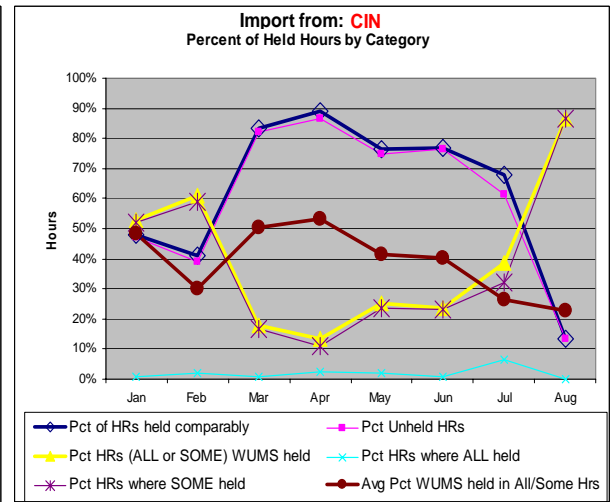
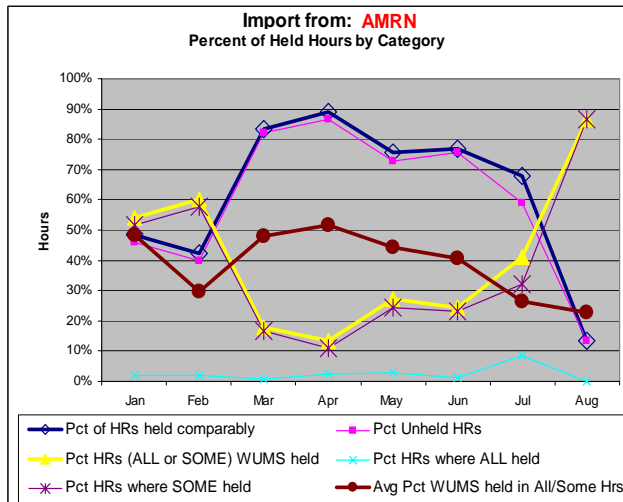
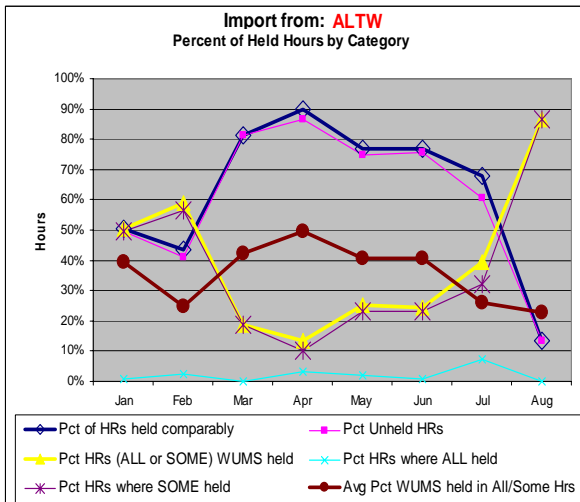
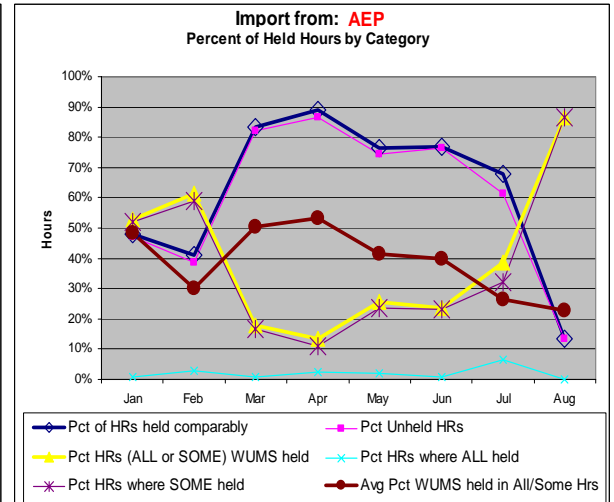
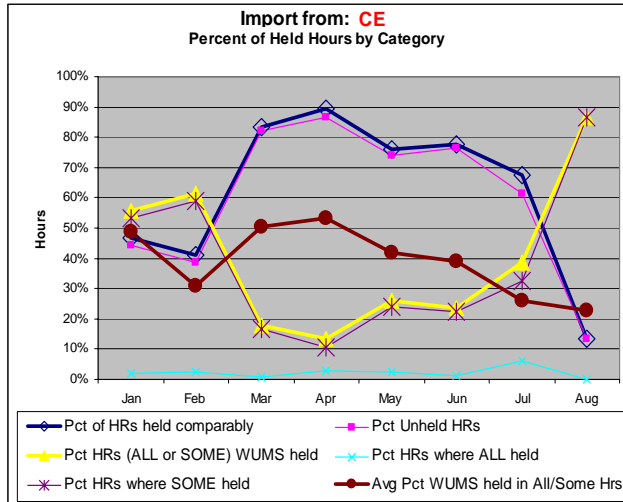
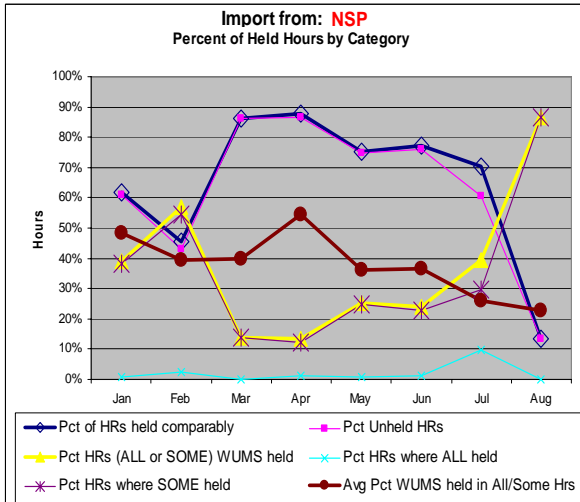
NOTE: Only partial August data through 8/4/04

Brown line: If 2 of 5 WUMS direction were held for an hour, that would contribute 40% toward this measure.



TLR Activity

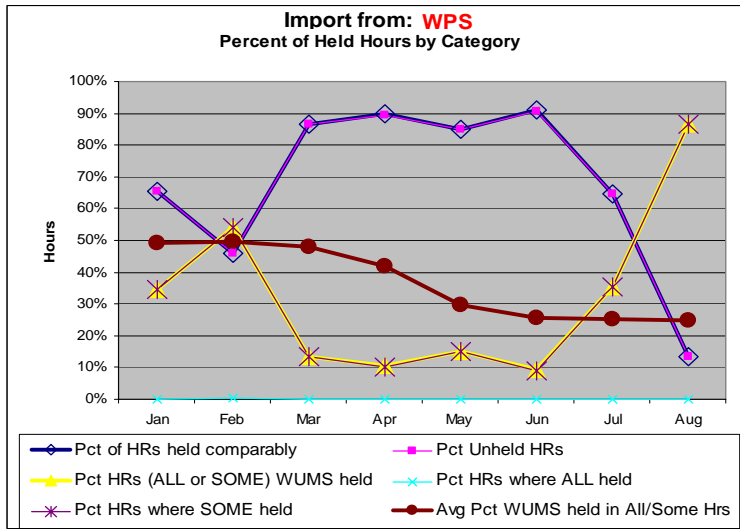
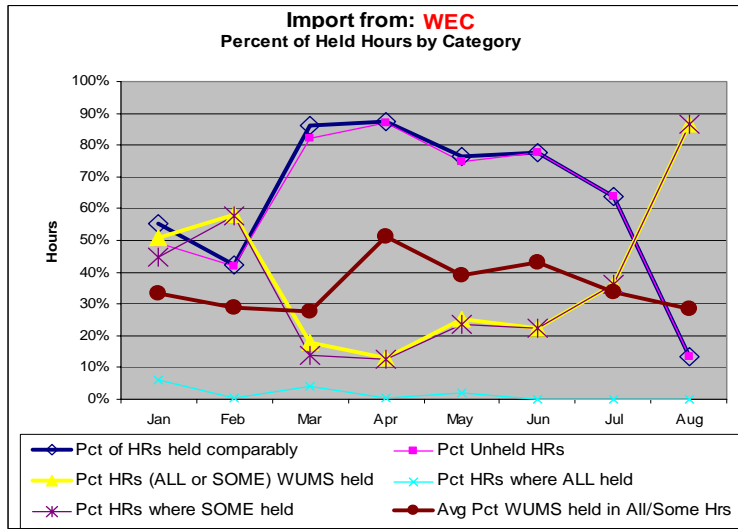
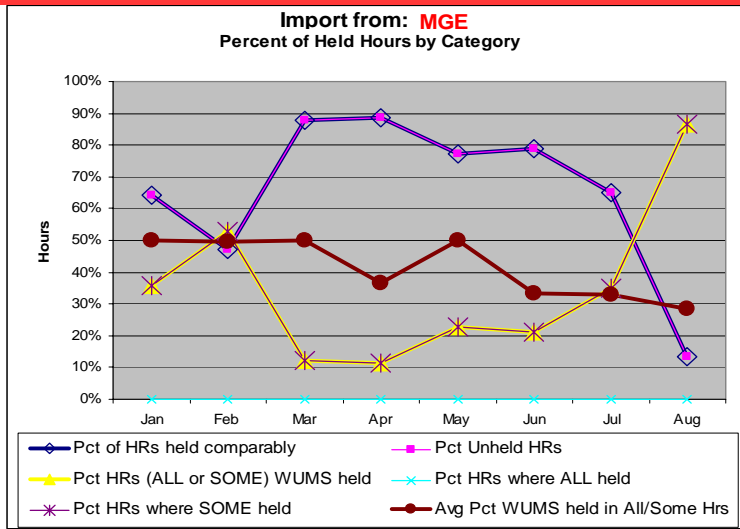
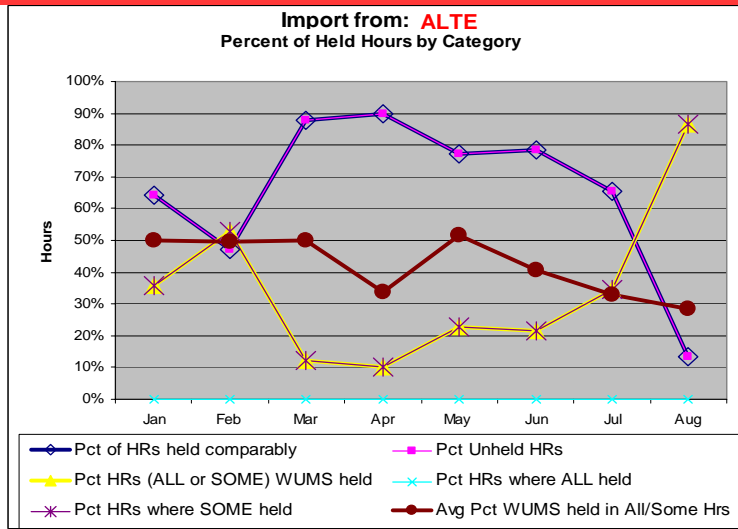
Import Capability from External directions





TLR Activity

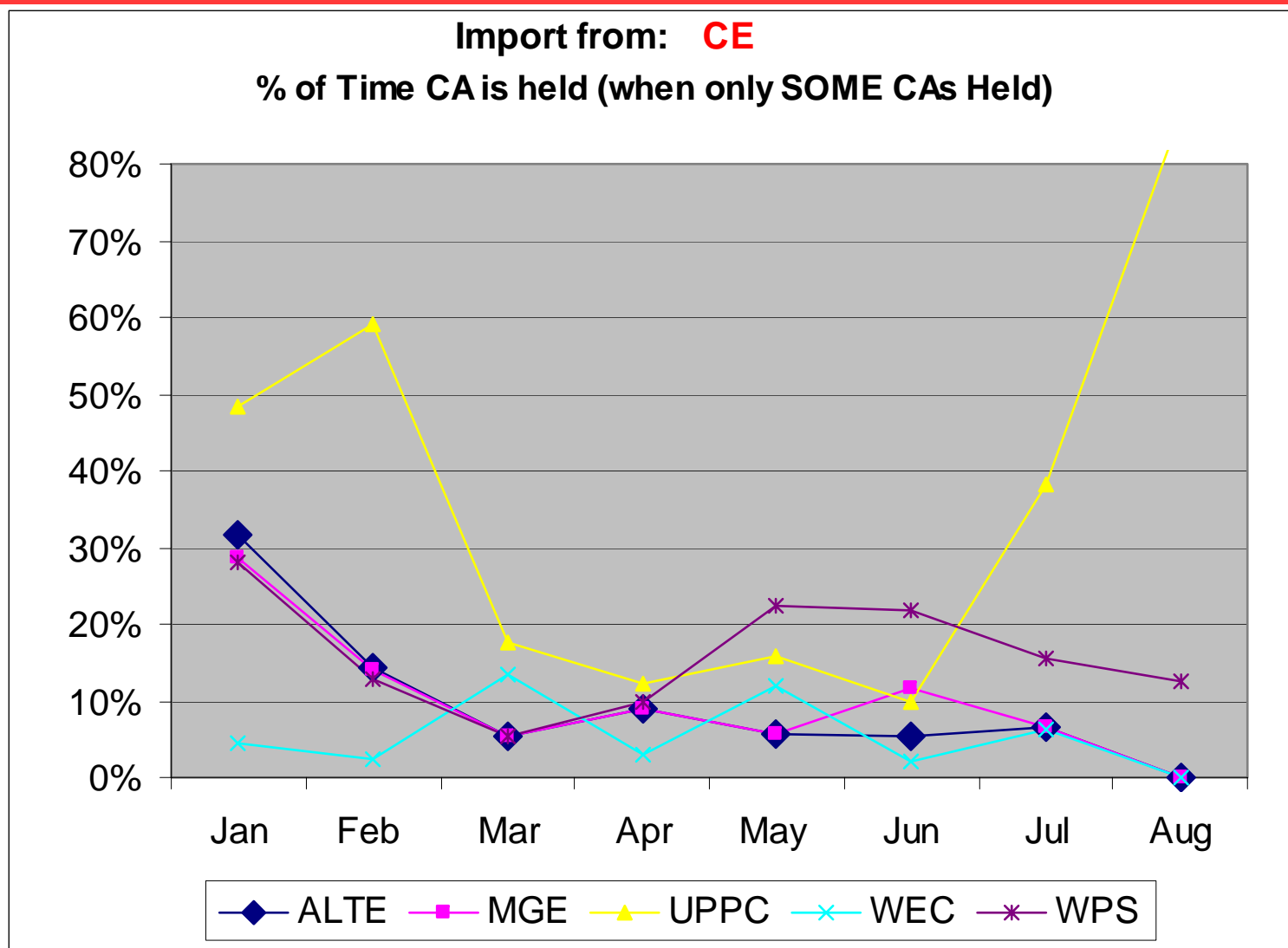
Import Capability from **Internal** directions





WUMS CA breakdown

Import Capability from CE

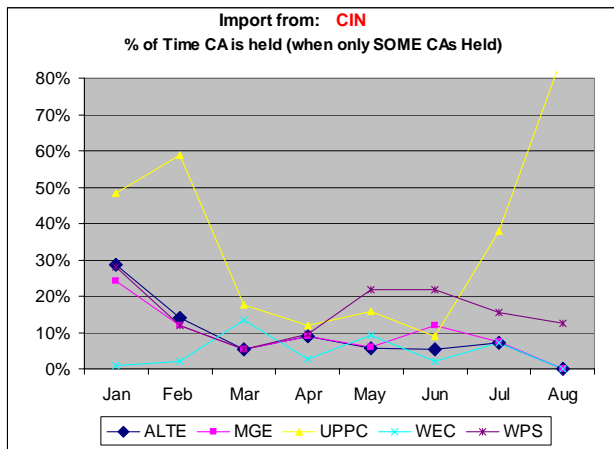
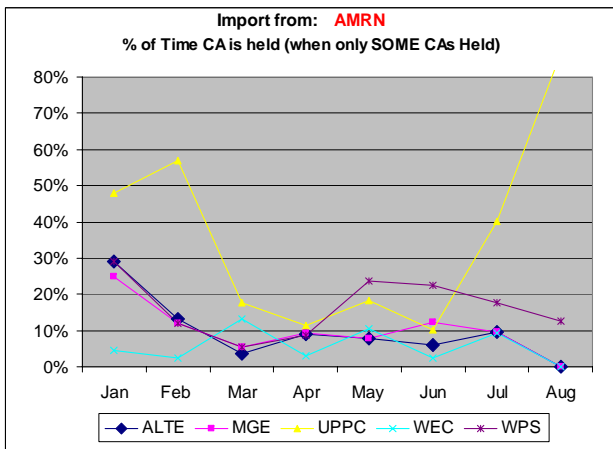
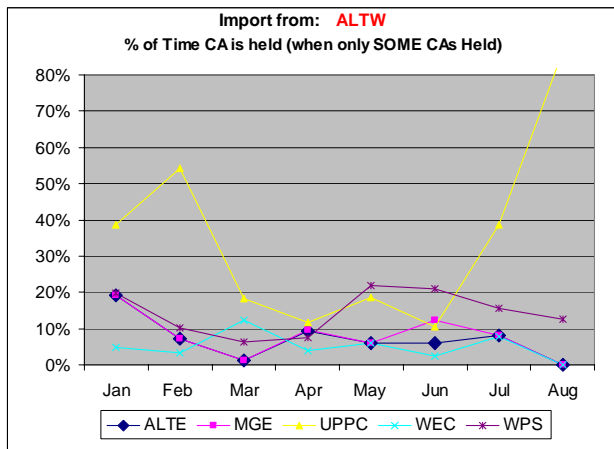
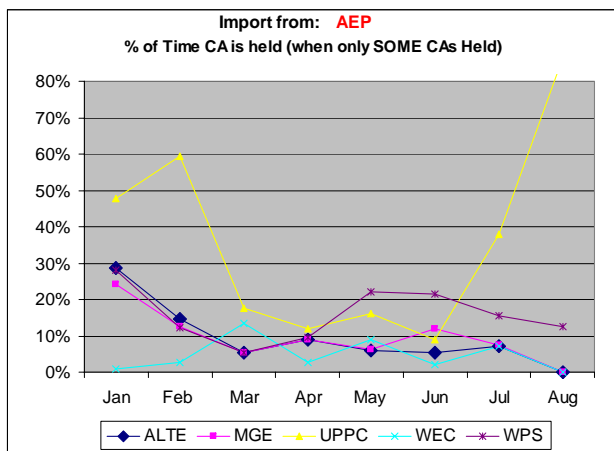
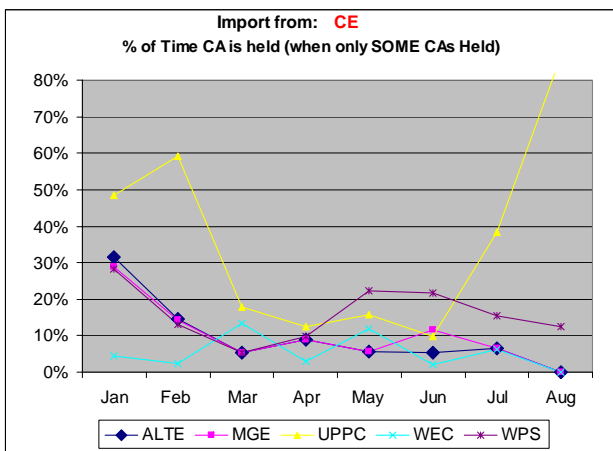
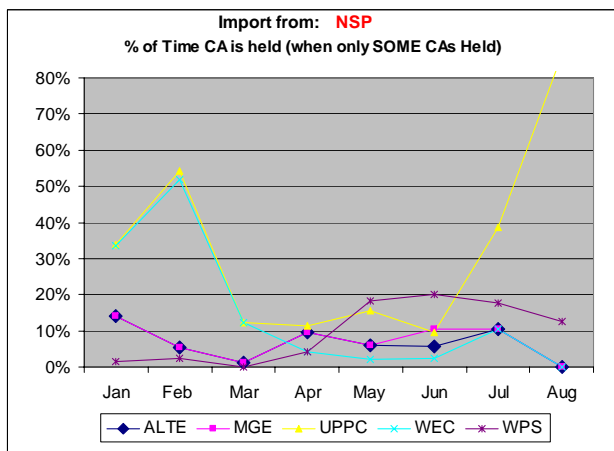


NOTE: Only partial August data through 8/4/04



WUMS CA breakdown

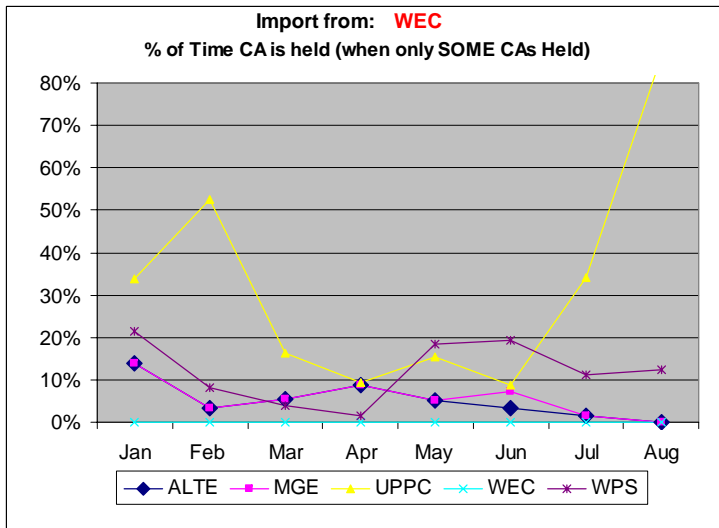
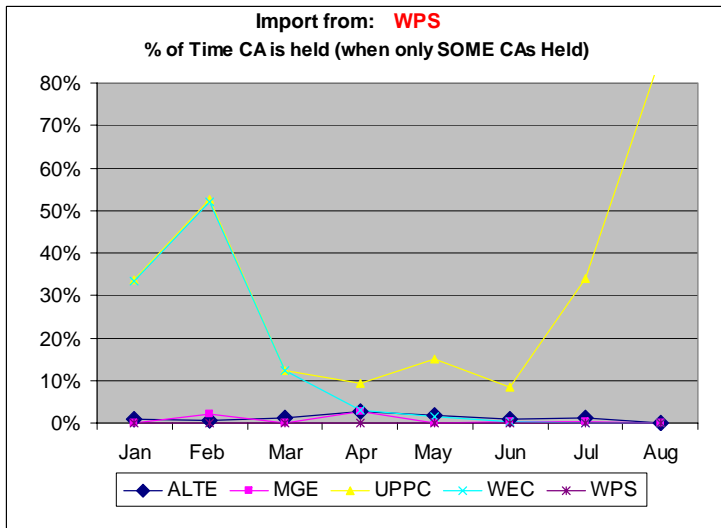
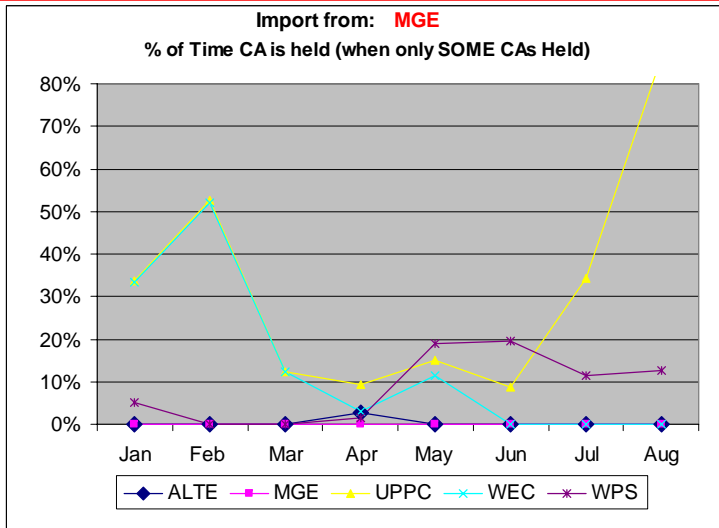
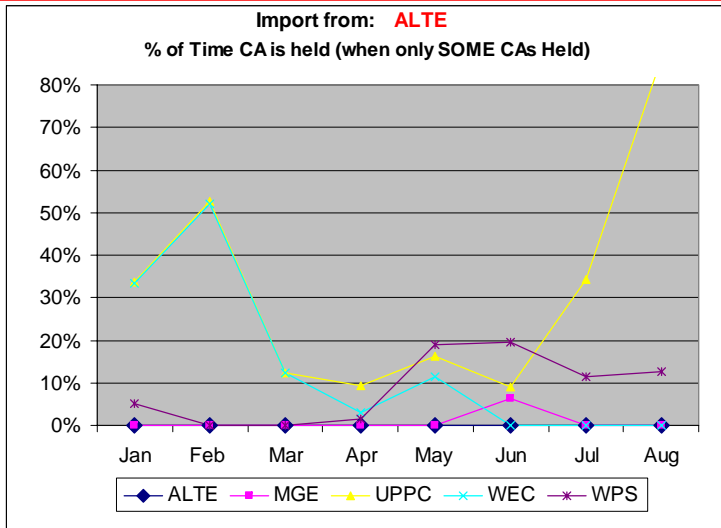
Import Capability from External directions





WUMS CA breakdown

Import Capability from **Internal** directions





Flowgates by CA – ATC

resulting in import directions with TDF \geq 5%

ATCLLC Flowgates (Hours)

FGnum	FGname	ALTE	MGE	UPPC	WEC	WPS
3006	EAU CLAIRE-ARPIN 345 KV	4	4	4	4	4
3009	EAU CLAIRE-ARPIN+WEMPLETOWN-PADDOCK	3	3	3	3	3
3012	PADDOCK XFMR 1 + PADDOCK-ROCKDALE	21	21	21	21	21
3017	Cassvl-NED 161 for Wemp-Paddock 345	1	1	1	1	1
3032	ROCKY RUN -NORTHPT+WESTON-ROCKY RUN					61
3033	Arpin Xformer+Arpin-Rocky Run 345	4	4	4	4	4
3057	T Corners-Wien 115 flo Arpin-Rocky Run 345 + Op Guide	3	3	3	3	3
3522	Albers-Paris138 for Wemp-Paddock 345	172	172	124	36	172
3523	Stiles-Pioneer 138 for N.Appl-WhiteClay138			83	11	
3527	PleasPr-Racine 345 for Wemp-Pad 345	43	43	43	43	43
3529	N. Appleton-Rocky Run 345kV	23	19			32
3534	Kenosha-Albers 138 for Wempletown-Paddock 345	8	8	5	8	8
3538	Pulliam4-Stiles 138 (flo) Pulliam5-Stiles 138			2		
3565	Paris-Burlington 138 (flo) Wempletown-Paddock 345	10	10			
3567	Flow South			990	704	
3579	Stiles-Pioneer 138 (flo) White Clay-Morgan 138			47		
3581	White Clay-Morgan 138 (flo) Pulliam-Stiles (64441) 138			24		
3602	ROCKY RUN - N APPLETON 345 KV	2	2	2	2	2
3609	ROCKY RUN-WESTON 345 KV					91
3617	HIGHWAYV-PREBLE+N APPLTN-WHITE CLAY			84	74	84
3618	HIGHWAYV-PREBLE+N APPLTN-MASON ST			3		3
3630	Rocky Run-Weston 115 flo Rocky Run-Weston 345					9
3631	Highway V - Preble 138 (flo) Lost Dauphin - Red Maple 138		46	125		125
11867	Badger - Caroline 115 (flo) N. Appleton - Rocky Run 345	6	6		6	6
11999	Butler-Granville 138 (flo) Blue Mound-Tosa 138	30	30	30		30
12295	Highway V - Preble 138 (flo) Depere - Glory Rd. 138			7		7
12315	Columbia 345/138 (flo) Columbia - N. Madison 345					4



Flowgates by CA -External

resulting in import directions with TDF \geq 5%

External Flowgate (Hours)

FGnum	FGname	ALTE	MGE	UPPC	WEC	WPS
1620	Cumbland-Davidson&Cumbland-Jvill	15	15	31	26	18
1634	Volunteer-Bull Run&WBN-Volunteer	3	3	3	3	3
1641	Volunteer-PhippsBend 500 for Loss of Volunteer 500/161 xfm	37	37	37	37	37
1645	Volunteer 500/161kV	10	10	10	10	10
2358	Wylie Ridge #5 345/500 xfmr l/o Wylie Ridge #7 345/500 xfmr	3	3	2	2	3
3102	BLAND-FRANKS 345 KV	4	4	4	4	4
3113	NEWTON-CASEY 345 KV	1	1	1	1	1
3167	St. Francois - Lutesville 345k	11	11	11	11	11
3219	0622 Byr-ChV Red for 0624 Byr-Wemp	16	16	16	16	16
3704	Poweshiek-Reasnor 161 for Montezuma-Bondurant 345					8
3705	Arnold-Hazelton 345 for Wemp-Paddock 345	176	176	176	173	176
3707	Lore-Turkey River 161 (flo) Wempletown-Paddock 345	100	100	100	89	100
3714	Lakefield Jct.-Fox Lk 161 for Arnold-Hazelton 345			1		1
3724	Arnold-Vinton 161 for D.Arnold-Hazleton 345					1
3727	Lakefield-Fox Lk 161 for Lakefield-LGS 345					27
3736	Salem 345/161 flo Wempletown-Paddock 345	84	84			6
3747	Lakefield-Fox lake 161 (flo) Lakefield-Wilmarth 345	66	67	76		209
3749	Arnold-Hazelton 345 (flo) Montezuma-Bondurant 345	26	26	26	26	26
6004	MWSI	8	8	8	8	8
6009	COOPER_S	9	9	9	9	9
6012	PRI-BYN	14	14	14	14	14
6069	Alma - Wabaco 161kV (flo) Eau Claire - Arpin 345kV	1	1	1	1	1
6081	Quad City West 345kV			5		5
6086	Montezuma-Bondurant 345kV	18	18	18	18	18
6112	Byron-Maple Leaf 161 flo Byron-Pleasant Valley 345	4	4	4	4	4
6123	Raun-Sioux City 345kV flo Raun-Lakefield 345kV	8	8	8	8	8
6144	Lakefield - Lakefield Gen 345kV	8	8	8	8	8
7104	NEGATIVE_Blip(Negative Buch Lgwd Input)	13	13	13	13	13
9084	MECS-IMO	4	4	4	4	4
11876	St. Joe-Fairport 345kV	3	3	3		3
11910	Salem 345/161 kV XFMR (flo) Tiffin-Arnold 345	15				
11911	Salem 345/161 XFMR (flo) Hills-Tiffin 345	12				
11915	Salem 345/161 XFMR (flo) Tiffin-Arnold 345	7				
12028	Volunteer 500/161kV xfmr flo Bull Run 500/161kV xfmr	24	24	24	24	24
12044	Lakefield - Foxlake 161 (flo) Wilmarth - Blue Lake 345					3
12120	Cooper-Booneville 345kV	13	13	13	13	13
12181	Lakefield - Fox Lake 161 (flo) Blue Lake - Wilmarth 345					1



Flowgates by Month -ATC

affecting any WUMS import directions with TDF >= 5%

ATCLLC Flowgates (Hours) Imports from CE

Source CA	FGnum	FGname	ON-Peak								OFF-Peak							
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
CE	3006	EAU CLAIRE-ARPIN 345 KV							4									
CE	3009	EAU CLAIRE-ARPIN+WEMPLETOWN-PADDOCK						3										
CE	3012	PADDOCK XFMR 1 + PADDOCK-ROCKDALE		2		18							1					
CE	3017	Cassvl-NED 161 for Wemp-Paddock 345												1				
CE	3032	ROCKY RUN -NORTHPT+WESTON-ROCKY RUN	4					45	5			1		6				
CE	3033	Arpin Xformer+Arpin-Rocky Run 345										1						
CE	3057	T Corners-Wien 115 flo Arpin-Rocky Run 345 + Op Guide					3						3					
CE	3522	Albers-Paris138 for Wemp-Paddock 345	73	15	10	21	13			28						1		
CE	3523	Stiles-Pioneer 138 for N.Appl-WhiteClay138				43	22							5				
CE	3527	PleasPr-Racine 345 for Wemp-Pad 345	6									37						
CE	3529	N. Appleton-Rocky Run 345kV	21															
CE	3534	Kenosha-Albers 138 for Wempletown-Paddock 345							8									
CE	3538	Pulliam4-Stiles 138 (flo) Pulliam5-Stiles 138										2						
CE	3565	Paris-Burlington 138 (flo) Wempletown-Paddock 345										10						
CE	3567	Flow South	125	186	51	12			13	108						83		
CE	3579	Stiles-Pioneer 138 (flo) White Clay-Morgan 138	3	3						11							1	
CE	3581	White Clay-Morgan 138 (flo) Pulliam-Stiles (64441) 138									21				3			
CE	3581	White Clay-Morgan 138 (flo) Pulliam-Stiles (64441) 138																
CE	3602	ROCKY RUN - N APPLETON 345 KV								2								
CE	3609	ROCKY RUN-WESTON 345 KV					3		78						10			
CE	3617	HIGHWAYV-PREBLE+N APPLTN-WHITE CLAY						68										
CE	3618	HIGHWAYV-PREBLE+N APPLTN-MASON ST					3											
CE	3630	Rocky Run-Weston 115 flo Rocky Run-Weston 345										7						
CE	3631	Highway V - Preble 138 (flo) Lost Dauphin - Red Maple 138					1		39	61								
CE	3631	Highway V - Preble 138 (flo) Lost Dauphin - Red Maple 138																
CE	11999	Butler-Granville 138 (flo) Blue Mound-Tosa 138				29										1		
CE	12295	Highway V - Preble 138 (flo) Depere - Glory Rd. 138									7							



Flowgates by Month -ATC

affecting any WUMS import directions with TDF >= 5%

ATCLLC Flowgates (Hours) Imports from NSP

Source CA	FGnum	FGname	ON-Peak								OFF-Peak							
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
NSP	3006	EAU CLAIRE-ARPIN 345 KV							4									
NSP	3009	EAU CLAIRE-ARPIN+WEMPLETOWN-PADDOCK						3										
NSP	3012	PADDOCK XFMR 1 + PADDOCK-ROCKDALE		2		18							1					
NSP	3017	Cassvl-NED 161 for Wemp-Paddock 345						1										
NSP	3032	ROCKY RUN -NORTHPT+WESTON-ROCKY RUN	4					45	5					6				
NSP	3033	Arpin Xformer+Arpin-Rocky Run 345									1							
NSP	3057	T Corners-Wien 115 flo Arpin-Rocky Run 345 + Op Guide				3												
NSP	3522	Albers-Paris138 for Wemp-Padock 345	73	15	10	21	13			28						1		
NSP	3523	Stiles-Pioneer 138 for N.Appl-WhiteClay138				43	22											
NSP	3527	PleasPr-Racine 345 for Wemp-Pad 345	6								37							
NSP	3534	Kenosha-Albers 138 for Wempletown-Paddock 345							8									
NSP	3538	Pulliam4-Stiles 138 (flo) Pulliam5-Stiles 138								2								
NSP	3565	Paris-Burlington 138 (flo) Wempletown-Paddock 345								10								
NSP	3567	Flow South	125	186	51	12		13	108	45	115	164	41	10		83	37	
NSP	3579	Stiles-Pioneer 138 (flo) White Clay-Morgan 138	3	3						11	22	1	3			1	3	
NSP	3581	White Clay-Morgan 138 (flo) Pulliam-Stiles (64441) 138								21						3		
NSP	3602	ROCKY RUN - N APPLETON 345 KV							2									
NSP	3609	ROCKY RUN-WESTON 345 KV					3		78					10				
NSP	3617	HIGHWAYV-PREBLE+N APPLTN-WHITE CLAY																
NSP	3617	HIGHWAYV-PREBLE+N APPLTN-WHITE CLAY						68						16				
NSP	3618	HIGHWAYV-PREBLE+N APPLTN-MASON ST				3												
NSP	3630	Rocky Run-Weston 115 flo Rocky Run-Weston 345								7								
NSP	3631	Highway V - Preble 138 (flo) Lost Dauphin - Red Maple 138					1		39	61	12				2			
NSP	12295	Highway V - Preble 138 (flo) Depere - Glory Rd. 138								7					7	5		
NSP	12315	Columbia 345/138 (flo) Columbia - N. Madison 345								4								



Flowgates by Month -ATC

affecting any WUMS import directions with TDF \geq 5%

ATCLLC Flowgates (Hours) Imports from ALTW

Source CA	FGnum	FGname	ON-Peak								OFF-Peak							
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
ALTW	3006	EAU CLAIRE-ARPIN 345 KV							4									
ALTW	3009	EAU CLAIRE-ARPIN+WEMPLETOWN-PADDOCK						3										
ALTW	3012	PADDOCK XFMR 1 + PADDOCK-ROCKDALE			2		18							1				
ALTW	3017	Cassvl-NED 161 for Wemp-Paddock 345						1										
ALTW	3032	ROCKY RUN -NORTHPT+WESTON-ROCKY RUN	4					45	5					6				
ALTW	3033	Arpin Xformer+Arpin-Rocky Run 345										1						
ALTW	3057	T Corners-Wien 115 flo Arpin-Rocky Run 345 + Op Guide					3							3				
ALTW	3522	Albers-Paris138 for Wemp-Paddock 345	73	15	10	21	13			28						1		
ALTW	3523	Stiles-Pioneer 138 for N.Appl-WhiteClay138				43	22							13	5			
ALTW	3527	PleasPr-Racine 345 for Wemp-Pad 345	6							37								
ALTW	3534	Kenosha-Albers 138 for Wempletown-Paddock 345							8									
ALTW	3538	Pulliam4-Stiles 138 (flo) Pulliam5-Stiles 138									2							
ALTW	3565	Paris-Burlington 138 (flo) Wempletown-Paddock 345								10								
ALTW	3567	Flow South	125	186	51	12			13	108	45					83	37	
ALTW	3579	Stiles-Pioneer 138 (flo) White Clay-Morgan 138	3	3						11	22					1	3	
ALTW	3581	White Clay-Morgan 138 (flo) Pulliam-Stiles (64441) 138								21							3	
ALTW	3602	ROCKY RUN - N APPLETON 345 KV							2									
ALTW	3609	ROCKY RUN-WESTON 345 KV					3		78						10			
ALTW	3617	HIGHWAYV-PREBLE+N APPLTN-WHITE CLAY						68						16				
ALTW	3618	HIGHWAYV-PREBLE+N APPLTN-MASON ST					3											
ALTW	3630	Rocky Run-Weston 115 flo Rocky Run-Weston 345								7					2			
ALTW	3631	Highway V - Preble 138 (flo) Lost Dauphin - Red Maple 138					1		39	61	12				7	5		
ALTW	11999	Butler-Granville 138 (flo) Blue Mound-Tosa 138			29													
ALTW	12295	Highway V - Preble 138 (flo) Depere - Glory Rd. 138								7								
ALTW	12315	Columbia 345/138 (flo) Columbia - N. Madison 345								4								



Report Updates

- These reports will be updated for Q3
- Reporting suggestions appreciated.
- Additional information is available on request.