

Utah Cost of Service and Rate Design Task Force



Committee of Consumer Services
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OVERVIEW

- System vs. Jurisdictional cost allocation
 - Retail load pattern
 - Generation pattern
 - Long-term Firm Wholesale pattern
 - Short-term Firm Wholesale pattern
 - Economy Wholesale pattern
 - Cost allocation implications
- Customer Charge



System vs. Jurisdictional Costs

- Costs come from system load, not isolated jurisdictional loads.
- Costs come from the way system costs are allocated to the jurisdiction.
- The appropriate starting place for defining costs is to look at the system load and allocation factors.

Retail Load Pattern

(MW x 1,000)

July 2003 Retail Load																																	
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	98	
Temp	96	94	93	92	94	95	96	87	94	103	102	105	99	98	105	102	102	100	100	100	101	104	104	101	94	91	94	95	99	101	97	98	
1	5.6	5.4	5.4	5.2	5.0	5.2	5.4	5.7	5.5	5.7	5.8	5.7	5.6	5.5	5.7	5.9	5.9	5.9	5.8	5.8	6.1	6.1	6.1	5.8	5.4	5.3	5.6	5.9	6.0	6.0	5.7	6.0	
2	5.3	5.3	5.2	5.0	4.9	5.0	5.2	5.5	5.3	5.4	5.6	5.5	5.4	5.3	5.6	5.7	5.7	5.6	5.6	5.6	5.9	5.8	5.6	5.2	5.1	5.4	5.7	5.7	5.8	5.5	5.7		
3	5.2	5.1	5.1	4.9	4.8	4.9	5.1	5.4	5.1	5.3	5.5	5.3	5.2	5.1	5.5	5.6	5.6	5.5	5.4	5.5	5.7	5.7	5.6	5.5	5.1	5.0	5.3	5.5	5.5	5.6	5.3	5.6	
4	5.2	5.1	5.1	4.8	4.7	4.8	5.1	5.4	5.1	5.3	5.4	5.2	5.1	5.1	5.4	5.5	5.5	5.5	5.3	5.3	5.4	5.6	5.6	5.5	5.4	5.0	4.9	5.2	5.4	5.5	5.5	5.3	5.5
5	5.3	5.2	5.2	4.8	4.7	4.8	5.2	5.4	5.2	5.3	5.5	5.2	5.1	5.3	5.5	5.6	5.6	5.6	5.3	5.3	5.5	5.7	5.7	5.5	5.5	5.1	4.9	5.4	5.5	5.6	5.6	5.3	5.6
6	5.5	5.4	5.3	4.8	4.6	4.8	5.5	5.7	5.4	5.5	5.6	5.2	5.1	5.5	5.8	5.8	5.8	5.8	5.3	5.2	5.8	6.0	6.0	5.8	5.7	5.1	4.9	5.6	5.8	5.8	5.9	5.5	5.8
7	6.0	5.9	5.8	5.0	4.8	4.8	6.0	6.1	5.9	5.9	6.1	5.4	5.2	6.0	6.2	6.3	6.3	6.2	5.5	5.3	6.3	6.4	6.4	6.1	6.1	5.3	5.0	6.0	6.2	6.2	6.2	5.8	6.2
8	6.5	6.4	6.3	5.3	5.2	5.2	6.5	6.5	6.4	6.5	6.6	5.9	5.6	6.6	6.8	6.8	6.9	6.8	6.0	5.7	6.9	7.0	7.0	6.6	6.6	5.7	5.4	6.6	6.8	6.8	6.7	6.3	6.8
9	6.9	6.8	6.6	5.6	5.6	5.5	7.0	6.9	6.7	6.9	7.1	6.4	6.0	7.0	7.2	7.2	7.3	7.3	6.5	6.1	7.4	7.5	7.4	7.0	7.1	6.2	5.8	7.0	7.0	7.2	7.2	6.8	7.2
10	7.2	7.0	6.9	5.9	6.0	5.8	7.3	7.2	7.0	7.2	7.5	6.7	6.4	7.4	7.6	7.6	7.7	7.7	6.9	6.5	7.8	7.9	7.8	7.4	7.5	6.6	6.2	7.4	7.6	7.6	7.6	7.1	7.6
11	7.3	7.2	7.1	6.1	6.2	6.1	7.5	7.3	7.2	7.5	7.6	7.1	6.7	7.6	7.9	7.8	7.9	8.0	7.2	6.7	8.1	8.2	8.1	7.7	7.8	6.8	6.5	7.8	7.9	8.0	7.9	7.4	7.9
12	7.4	7.3	7.2	6.3	6.4	6.3	7.7	7.4	7.4	7.7	7.8	7.3	6.9	7.8	8.1	7.9	8.0	8.2	7.4	7.0	8.4	8.4	8.3	7.9	7.8	7.0	6.7	7.9	8.2	8.2	8.1	7.6	8.0
13	7.5	7.4	7.3	6.4	6.5	6.5	7.9	7.6	7.5	7.9	8.1	7.4	7.0	8.0	8.3	8.0	8.2	8.3	7.5	7.2	8.5	8.6	8.5	8.0	8.0	7.1	6.9	8.2	8.4	8.5	8.3	7.7	8.2
14	7.6	7.3	7.4	6.5	6.7	6.7	8.0	7.6	7.7	8.1	8.2	7.5	7.1	8.1	8.4	8.1	8.3	8.4	7.6	7.4	8.7	8.7	8.6	8.1	8.0	7.1	7.1	8.3	8.5	8.6	8.3	7.8	8.3
15	7.6	7.5	7.4	6.5	6.7	6.8	8.1	7.6	7.8	8.3	8.3	7.6	7.2	8.2	8.4	8.2	8.4	8.4	7.7	7.5	8.8	8.9	8.7	8.1	8.0	7.2	7.2	8.4	8.6	8.7	8.4	7.9	8.4
16	7.6	7.6	7.4	6.6	6.9	7.0	8.1	7.6	8.0	8.3	8.4	7.7	7.2	8.3	8.4	8.2	8.4	8.4	7.8	7.6	8.8	8.9	8.7	8.1	8.0	7.3	7.4	8.5	8.7	8.7	8.4	8.0	8.4
17	7.6	7.6	7.4	6.7	7.0	7.1	8.1	7.6	8.0	8.3	8.3	7.7	7.3	8.3	8.4	8.2	8.3	8.3	7.8	7.7	8.8	8.8	8.6	8.0	7.9	7.4	7.4	8.4	8.6	8.7	8.4	8.0	8.4
18	7.5	7.4	7.3	6.6	7.0	7.1	8.0	7.5	7.9	8.2	8.2	7.7	7.3	8.2	8.2	8.1	8.1	8.1	7.8	7.7	8.6	8.7	8.5	7.9	7.7	7.3	7.4	8.3	8.5	8.5	8.2	7.9	8.3
19	7.3	7.4	7.1	6.5	6.9	7.0	7.8	7.4	7.8	8.1	7.9	7.4	7.1	8.0	8.0	7.9	7.9	7.9	7.6	7.6	8.5	8.5	8.2	7.7	7.5	7.2	7.3	8.2	8.4	8.4	8.0	7.7	8.1
20	7.1	7.2	6.9	6.3	6.7	6.9	7.5	7.1	7.6	7.9	7.7	7.3	7.0	7.8	7.8	7.7	7.8	7.7	7.5	7.4	8.3	8.3	8.1	7.5	7.3	7.0	7.2	8.0	8.2	8.2	7.8	7.5	7.9
21	7.0	7.1	6.8	6.0	6.6	6.8	7.5	7.0	7.5	7.7	7.5	7.2	6.9	7.6	7.7	7.7	7.7	7.6	7.4	7.4	8.2	8.2	7.9	7.4	7.0	6.9	7.1	7.9	8.0	8.0	7.7	7.4	7.8
22	6.9	6.8	6.6	5.8	6.4	6.6	7.2	6.8	7.2	7.3	7.2	6.9	6.7	7.3	7.4	7.3	7.4	7.3	7.2	7.1	7.8	7.8	7.6	7.2	6.7	6.6	6.9	7.6	7.7	7.6	7.3	7.1	7.5
23	6.3	6.3	6.1	5.6	6.0	6.2	6.6	6.3	6.6	6.8	6.7	6.5	6.2	6.7	6.9	6.7	6.8	6.8	6.7	6.5	7.1	7.2	7.0	6.6	6.2	6.1	6.4	6.8	7.0	7.0	6.8	6.6	6.9
24	5.8	5.8	5.6	5.4	5.5	5.7	6.0	5.8	6.0	6.2	6.2	6.0	5.7	6.1	6.3	6.2	6.3	6.3	6.2	6.1	6.6	6.5	6.4	6.2	5.8	5.6	5.9	6.3	6.4	6.4	6.3	6.0	6.4
Ave.	6.6	6.6	6.4	5.8	5.9	6.0	6.8	6.7	6.7	7.0	7.0	6.6	6.3	6.9	7.1	7.1	7.1	7.2	6.7	6.5	7.4	7.5	7.4	7.0	6.8	6.3	6.2	7.1	7.3	7.3	7.2	6.8	7.2
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		

Retail Load Pattern

(Percentage of Peak)

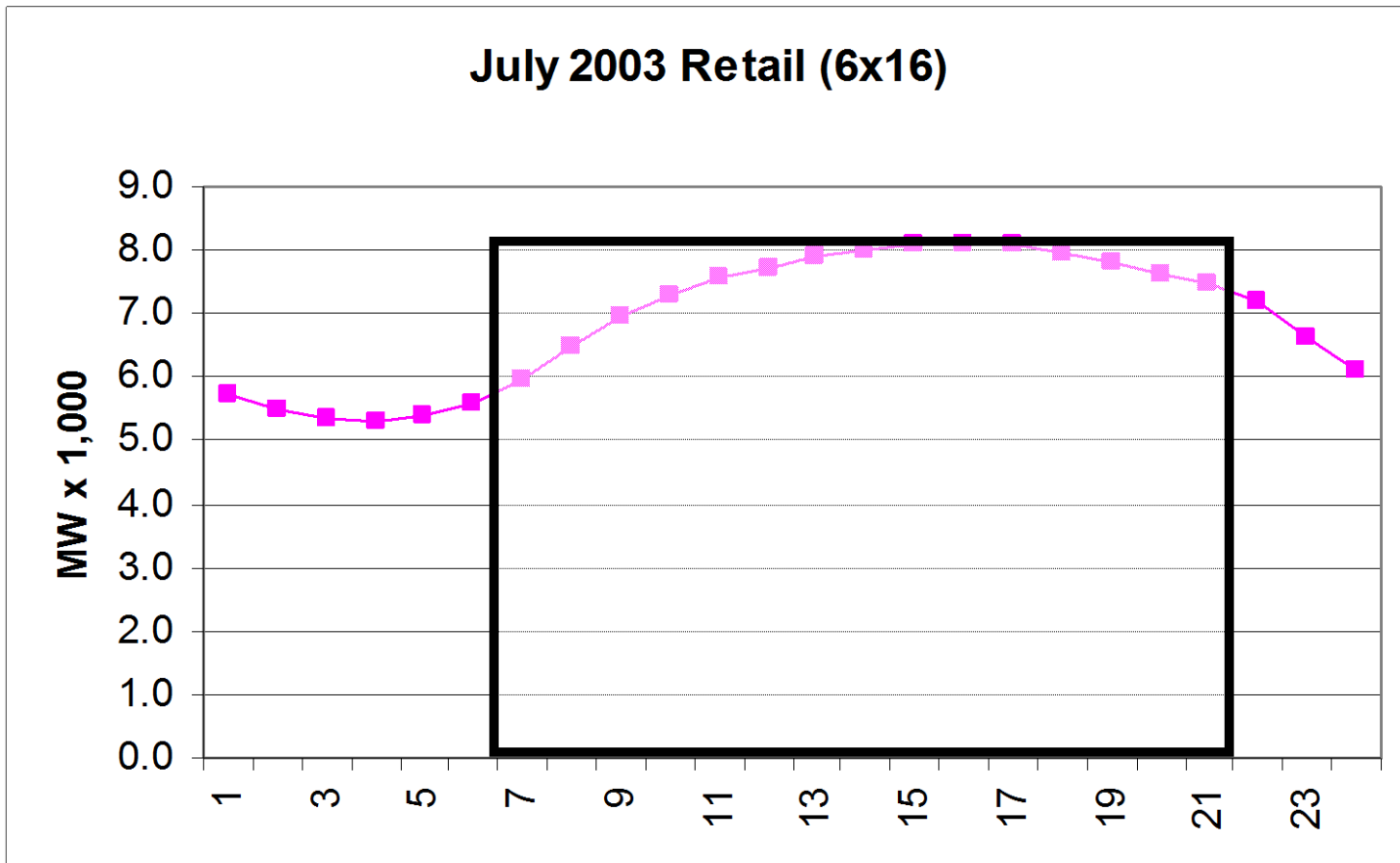
July 2003 Retail Load																																	
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	Ave.	6x16
1	63	61	61	59	57	58	61	65	61	64	66	64	63	61	65	67	66	66	66	65	65	69	68	68	65	61	60	63	66	68	68	64	67
2	60	59	59	56	55	56	59	62	59	61	63	62	60	59	63	64	64	64	63	63	63	66	66	65	63	58	57	61	64	64	65	61	64
3	59	58	57	55	54	55	58	61	58	60	61	60	59	58	61	63	63	62	61	61	61	65	64	63	61	57	56	60	62	62	63	60	63
4	58	57	57	54	53	54	57	60	57	59	61	59	58	58	61	62	62	61	60	60	61	63	63	62	61	57	55	59	61	62	62	59	62
5	59	59	58	54	53	54	59	61	59	60	61	59	58	59	62	63	63	63	60	60	62	65	65	62	62	57	55	60	62	63	64	60	63
6	62	61	60	54	52	53	61	64	61	62	63	58	57	62	65	66	66	65	60	59	65	67	67	65	64	58	55	63	65	66	62	65	
7	67	66	65	56	54	54	67	69	66	67	69	61	59	67	70	70	70	70	62	60	71	72	72	68	68	59	56	68	70	70	70	66	70
8	73	72	70	60	59	58	73	74	72	73	74	66	63	74	76	76	77	77	67	64	77	79	78	74	75	64	61	74	76	76	76	71	76
9	78	76	75	64	63	61	78	78	76	77	80	72	67	79	81	81	82	82	73	69	83	84	84	79	80	69	65	79	79	81	81	76	81
10	81	79	78	67	67	65	82	81	79	81	84	76	72	83	86	85	86	86	78	73	88	88	88	84	85	74	70	84	85	86	85	80	86
11	82	81	80	69	70	69	85	82	81	84	86	80	75	86	89	87	89	90	81	75	91	92	91	86	87	77	73	87	89	90	89	83	88
12	84	82	81	71	72	71	87	83	83	87	88	82	78	88	91	88	90	92	84	78	94	95	93	88	88	78	76	89	92	92	91	85	91
13	84	83	82	72	74	73	89	85	85	89	91	84	79	90	93	90	92	93	85	81	96	97	96	90	90	80	78	92	95	95	93	87	92
14	85	82	83	73	75	75	90	85	86	91	92	84	80	91	94	91	93	95	86	83	98	98	97	91	90	80	80	94	96	97	94	88	94
15	86	84	84	74	75	77	91	85	88	93	94	86	80	92	95	92	94	95	87	84	99	100	98	91	90	81	81	95	97	98	95	89	95
16	86	85	84	75	77	79	91	85	90	94	94	86	81	93	95	93	94	94	88	85	99	100	98	91	90	82	83	95	98	98	95	90	95
17	86	85	83	75	79	79	91	85	90	94	94	87	82	93	94	92	93	93	88	86	99	99	97	90	89	83	84	95	97	98	94	90	95
18	84	84	82	75	78	80	90	84	89	92	92	86	82	92	92	91	91	91	88	86	97	98	95	89	87	83	83	94	96	96	92	88	93
19	82	83	80	74	77	79	87	83	88	91	89	84	80	90	90	89	89	89	86	85	95	95	93	86	84	81	82	92	95	95	90	87	91
20	80	81	78	71	75	77	85	80	85	88	87	82	79	87	88	87	87	87	84	83	93	93	91	85	82	78	81	90	92	92	88	84	89
21	79	80	76	68	74	77	84	79	84	86	85	81	78	86	87	86	87	86	83	83	92	92	89	83	79	77	80	89	91	91	86	83	88
22	77	77	74	66	72	75	80	77	81	83	81	78	76	82	84	82	83	82	81	80	88	88	85	81	75	74	77	85	86	86	83	80	84
23	71	71	69	63	67	70	74	71	74	77	76	73	69	76	77	75	77	76	75	73	80	81	78	75	70	69	72	77	78	78	76	74	78
24	65	65	63	60	62	64	68	65	68	70	69	67	65	69	71	70	71	70	70	68	74	74	73	69	65	63	66	71	72	72	71	68	71
Ave.	75	74	72	65	66	67	77	75	76	78	79	74	71	78	80	80	80	80	76	74	83	84	83	79	77	71	70	80	82	82	81	76	81
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		

Retail usage patterns

Observations

- Load profile is relatively flat.
- The non-6x16 usage (Sundays and nights) is lower, but not significantly lower than 6x16.
- The 6x16 pattern is relatively flat for the monthly average as well as the peak day.

Average July 2003 6x16 Load





Average July 2003 6x16 Load Observations

- The average July 6x16 Retail load shows an expected pattern of lower load at the ends of the period and high in the middle.
- The peak 6x16 Retail load is 2,200 Mw's or 1/3rd greater than the load at 7:00 and 900 Mw's greater than at 22:00.
- How are resources combined to meet Retail load?

Generation Pattern (MW x 1,000)

		July 2003 Generation																																	
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16	
		7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31			
Temp		96	94	93	92	94	95	96	87	94	103	102	105	99	98	105	102	102	100	100	100	101	104	104	101	94	91	94	95	99	101	97	98		
1		6.2	6.1	5.8	5.7	5.8	5.8	5.8	6.1	6.0	5.9	5.9	5.8	5.9	6.3	6.1	6.1	5.9	6.1	6.4	6.2	6.4	6.5	6.1	6.1	6.0	5.4	5.0	6.1	5.9	6.1	6.1	6.0	5.9	6.3
2		6.2	6.1	5.8	5.6	5.7	5.6	5.6	6.0	5.9	5.9	5.9	5.6	5.7	6.3	6.1	6.2	6.0	6.1	6.3	6.0	6.2	6.4	5.9	5.9	6.0	5.2	5.0	6.0	5.9	6.0	6.0	5.9	6.2	
3		6.2	6.2	5.7	5.5	5.6	5.6	5.6	6.0	5.8	5.9	5.9	5.5	5.7	6.1	6.1	6.2	6.1	6.0	6.3	6.0	6.0	6.4	5.8	5.9	5.9	5.2	5.0	5.9	5.9	5.8	6.0	5.9	6.2	
4		6.2	6.0	5.6	5.4	5.4	5.7	5.7	6.0	5.8	5.9	5.9	5.5	5.9	6.2	5.9	6.1	6.1	6.1	6.3	6.1	6.1	6.2	5.8	5.8	5.8	5.2	4.9	5.8	5.9	5.9	6.0	5.8	6.1	
5		6.3	6.0	5.6	5.6	5.3	5.6	5.7	6.1	5.9	5.9	5.9	5.6	6.0	6.3	6.1	6.0	6.1	6.2	6.2	6.1	6.1	6.4	5.9	5.7	5.8	5.2	5.0	5.8	5.7	5.9	6.0	5.9	6.1	
6		6.4	5.9	5.6	5.6	5.0	5.6	5.8	6.1	5.9	6.0	6.0	5.4	5.8	6.3	6.1	5.9	6.2	6.3	6.0	6.1	6.1	6.4	5.9	5.7	5.8	5.1	5.0	5.8	5.6	5.8	5.9	5.8	6.1	
7		6.4	5.8	5.6	5.6	5.0	5.5	5.6	6.1	5.8	5.9	6.0	5.3	5.7	6.2	6.0	5.6	6.0	6.2	5.6	6.0	5.9	6.3	5.7	5.6	5.8	5.0	4.9	5.8	5.4	5.7	5.5	5.7	6.0	
8		6.4	5.9	5.8	5.9	5.7	5.7	5.9	6.1	6.1	6.0	6.0	5.8	6.1	6.3	6.1	5.9	6.3	6.2	6.1	6.3	6.1	6.4	5.8	5.7	6.1	5.3	5.3	6.0	5.9	5.9	5.8	6.0	6.2	
9		6.4	6.0	5.9	6.2	5.9	5.9	6.1	6.2	6.1	6.1	6.0	6.0	6.3	6.3	6.2	6.1	6.4	6.4	6.4	6.5	6.4	6.6	6.0	5.8	6.3	5.5	5.5	6.0	6.1	6.1	5.9	6.1	6.4	
10		6.5	6.0	5.9	6.2	6.1	6.1	6.4	6.4	6.3	6.2	6.0	6.2	6.4	6.5	6.5	6.3	6.6	6.6	6.5	6.6	6.7	6.8	6.1	5.9	6.5	5.6	6.0	6.2	6.3	6.2	6.1	6.3	6.5	
11		6.5	6.2	6.1	6.3	6.2	6.2	6.5	6.4	6.4	6.5	5.9	6.5	6.5	6.7	6.7	6.5	6.8	6.7	6.6	6.7	6.8	6.9	6.2	6.2	6.6	5.6	6.3	6.4	6.5	6.3	6.2	6.4	6.7	
12		6.7	6.4	6.1	6.5	6.3	6.3	6.6	6.4	6.5	6.5	6.0	6.6	6.7	6.8	6.7	6.6	6.8	6.9	6.7	6.8	6.8	6.9	6.2	6.2	6.3	5.7	6.4	6.4	6.5	6.4	6.2	6.5	6.7	
13		6.8	6.4	6.2	6.6	6.3	6.5	6.6	6.3	6.5	6.6	6.0	6.6	6.7	7.0	6.8	6.6	6.8	6.8	6.7	6.9	6.9	6.9	6.3	6.2	6.3	5.8	6.5	6.5	6.6	6.5	6.2	6.5	6.8	
14		7.0	6.3	6.3	6.6	6.4	6.5	6.8	6.2	6.6	6.8	6.1	6.6	6.8	6.9	6.9	6.6	6.8	6.9	6.8	7.0	6.8	6.9	6.4	6.2	6.1	5.8	6.5	6.5	6.7	6.6	6.2	6.6	6.8	
15		7.0	6.4	6.4	6.6	6.4	6.6	6.8	6.3	6.6	6.7	6.0	6.7	6.9	7.0	6.9	6.6	6.8	6.9	6.8	7.0	6.9	6.9	6.4	6.2	6.0	5.8	6.6	6.4	6.8	6.7	6.3	6.6	6.8	
16		7.0	6.5	6.5	6.7	6.5	6.6	6.7	6.4	6.7	6.8	6.1	6.7	6.9	7.1	6.9	6.7	6.9	6.9	6.8	7.1	7.0	6.9	6.4	6.2	6.1	5.8	6.7	6.2	6.8	6.8	6.4	6.6	6.9	
17		7.0	6.6	6.5	6.8	6.6	6.7	6.8	6.5	6.6	6.7	6.2	6.7	6.9	7.1	6.9	6.6	6.8	6.9	6.8	7.1	7.0	6.9	6.3	6.3	6.1	5.8	6.7	6.2	6.8	6.8	6.3	6.6	6.9	
18		6.9	6.5	6.5	6.8	6.6	6.7	6.8	6.5	6.6	6.7	6.1	6.7	6.8	7.0	6.8	6.7	6.8	6.9	6.8	7.1	6.9	6.9	6.3	6.4	6.1	5.6	6.6	6.2	6.8	6.7	6.4	6.6	6.8	
19		6.8	6.5	6.4	6.8	6.7	6.6	6.8	6.4	6.6	6.7	6.2	6.7	6.7	7.0	6.8	6.6	6.8	6.7	6.7	7.0	6.9	6.8	6.2	6.2	6.1	5.5	6.5	6.2	6.6	6.7	6.4	6.6	6.8	
20		6.7	6.2	6.2	6.6	6.6	6.5	6.7	6.4	6.5	6.5	6.1	6.7	6.8	6.8	6.8	6.6	6.8	6.7	6.7	6.9	6.9	6.8	6.2	6.3	6.0	5.4	6.5	6.2	6.5	6.6	6.5	6.5	6.7	
21		6.6	6.3	6.0	6.3	6.4	6.4	6.7	6.5	6.5	6.5	6.2	6.7	6.8	6.7	6.7	6.6	6.8	6.8	6.7	6.8	6.8	6.8	6.2	6.4	6.0	5.5	6.5	6.2	6.4	6.6	6.5	6.5	6.7	
22		6.5	6.1	6.0	6.1	6.2	6.4	6.7	6.4	6.4	6.4	6.1	6.7	6.7	6.6	6.7	6.4	6.6	6.7	6.7	6.7	6.7	6.7	6.7	6.2	6.4	6.0	5.5	6.5	6.2	6.4	6.5	6.4	6.4	6.6
23		6.4	6.0	6.0	6.0	6.0	6.2	6.5	6.2	6.3	6.3	6.1	6.6	6.5	6.4	6.6	6.4	6.5	6.7	6.4	6.4	6.7	6.6	6.2	6.3	5.9	5.4	6.3	6.2	6.4	6.3	6.3	6.3	6.5	
24		6.2	5.9	5.9	6.0	5.9	6.0	6.3	6.0	6.0	6.0	5.9	6.3	6.3	6.3	6.3	6.2	6.4	6.5	6.4	6.3	6.6	6.3	6.2	6.0	5.7	5.2	6.1	5.9	6.3	6.2	6.2	6.1	6.4	
Ave		6.5	6.2	6.0	6.2	6.0	6.1	6.3	6.2	6.3	6.3	6.0	6.2	6.4	6.6	6.5	6.3	6.5	6.5	6.6	6.6	6.7	6.1	6.1	6.1	5.5	5.9	6.1	6.3	6.3	6.2	6.3	6.3	6.5	
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th			

Generation Pattern (Percentage)

		July 2003 Generation																																
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		
		7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	Ave.	6x16
Temp		96	94	93	92	94	95	96	87	94	103	102	105	99	98	105	102	102	100	100	100	101	104	104	101	94	91	94	95	99	101	97	98	
1		90	88	84	83	84	84	84	88	87	86	85	84	85	91	88	89	86	89	92	90	92	94	89	88	87	79	72	88	86	89	88	87	91
2		90	88	84	82	82	82	82	87	86	86	86	82	83	91	88	90	87	88	92	87	90	93	85	86	87	75	73	87	85	87	87	85	90
3		90	89	82	80	81	82	81	87	84	85	85	80	82	89	88	90	88	88	92	87	87	92	84	86	85	76	73	85	85	85	87	85	89
4		90	88	81	78	78	82	83	87	83	85	85	80	85	89	86	89	88	88	91	88	88	90	83	84	84	75	71	83	86	85	87	84	89
5		92	87	82	82	76	81	83	88	85	85	85	81	87	91	88	88	88	89	91	88	89	92	85	83	84	75	72	84	83	86	86	85	89
6		92	86	81	82	73	81	84	89	86	86	86	79	84	91	89	85	90	91	88	88	88	94	85	82	84	74	72	84	81	85	85	84	89
7		92	84	81	81	73	80	82	89	85	85	86	77	82	91	88	81	87	89	81	88	85	92	83	81	84	72	71	84	78	83	80	83	87
8		93	86	84	86	83	83	85	89	89	87	87	84	88	92	89	85	91	90	88	92	89	93	84	83	88	76	77	86	86	85	84	86	90
9		93	87	85	90	86	86	89	89	89	89	87	87	91	91	90	88	93	93	92	94	93	96	87	83	92	80	79	87	88	88	86	88	92
10		94	87	85	90	89	88	93	93	91	90	87	90	93	94	94	91	96	95	95	96	97	98	88	86	94	81	86	90	92	90	88	91	95
11		95	90	88	91	90	90	95	93	92	94	86	94	95	97	96	94	98	98	95	97	98	100	90	90	95	82	92	92	94	92	89	93	97
12		98	93	89	94	92	91	95	92	94	95	88	96	97	99	97	95	99	99	97	99	99	100	90	90	92	82	93	93	95	93	90	94	98
13		99	93	89	96	91	94	96	92	95	96	88	96	97	101	99	95	99	99	98	100	100	100	91	90	91	84	94	95	96	94	90	95	98
14		101	91	91	95	93	95	98	90	95	98	88	96	98	100	100	96	99	100	98	102	99	100	92	90	89	84	94	95	97	96	91	95	99
15		101	93	92	96	93	95	98	91	96	98	87	97	100	101	100	96	99	101	98	102	100	100	93	90	87	84	95	92	98	97	91	95	99
16		101	95	94	98	94	96	97	93	96	98	88	97	100	103	100	97	99	99	98	103	101	100	93	89	88	84	98	90	99	98	93	96	99
17		101	95	94	99	95	97	98	94	96	97	90	97	100	103	100	96	99	101	98	103	101	100	92	91	88	84	97	90	98	98	91	96	99
18		101	94	94	99	96	97	98	94	96	97	89	97	99	101	99	96	98	98	98	103	100	100	91	92	88	82	96	90	98	98	93	96	99
19		98	94	94	98	97	96	98	93	95	96	90	97	98	102	98	96	98	98	97	102	100	99	91	91	88	80	95	90	96	97	92	95	99
20		97	91	90	96	96	94	97	93	95	95	89	97	99	99	99	96	99	97	97	100	100	99	90	92	87	79	94	90	94	96	94	94	98
21		96	91	88	92	93	93	97	94	94	94	89	97	98	98	98	95	99	98	97	99	99	99	90	93	87	80	94	90	93	96	94	94	98
22		94	89	87	88	90	93	97	93	93	93	88	97	97	95	97	93	96	97	97	97	97	98	90	92	86	80	94	90	93	94	93	93	96
23		92	87	87	87	87	90	94	90	91	91	89	96	94	93	96	93	95	97	93	93	97	95	90	91	86	79	91	89	92	91	92	91	95
24		90	85	85	87	85	87	91	87	88	87	86	91	92	91	91	89	92	95	93	92	95	91	89	87	83	75	89	86	91	89	90	89	92
Ave.		95	90	87	90	87	89	92	91	91	91	87	90	93	96	94	92	94	95	94	95	95	96	89	88	88	79	86	89	91	91	89	91	94
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		

Generation Pattern Observations



- Generation is very flat, even with the use of Peaking resources.
- Maximum generation did not occur at the time of the monthly coincident peak.
- Approximately 5% of the hourly generation was greater than during the time of the monthly coincident peak.

Retail Load less Generation

(MW x 1,000)

(Red values are negative)

		July 2003 Retail less Generation																															
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
Temp	96	94	93	92	94	95	96	87	94	103	102	105	99	98	105	102	102	100	100	100	101	104	104	101	94	91	94	95	99	101	97	98	102
1	0.7	0.6	0.4	0.5	0.8	0.6	0.4	0.4	0.5	0.3	0.0	0.0	0.3	0.8	0.3	0.2	0.0	0.2	0.5	0.4	0.6	0.4	0.1	0.0	0.2	0.0	0.3	0.5	0.0	0.1	0.1	0.3	0.3
2	0.9	0.8	0.5	0.6	0.8	0.7	0.4	0.5	0.6	0.5	0.3	0.1	0.4	1.0	0.5	0.5	0.3	0.4	0.7	0.4	0.6	0.5	0.0	0.1	0.4	0.0	0.1	0.6	0.2	0.3	0.2	0.5	0.5
3	1.0	1.0	0.6	0.6	0.8	0.8	0.5	0.5	0.6	0.6	0.4	0.2	0.4	1.0	0.6	0.6	0.5	0.5	0.9	0.6	0.6	0.6	0.1	0.3	0.4	0.2	0.0	0.6	0.4	0.3	0.4	0.5	0.6
4	1.0	0.9	0.5	0.6	0.7	0.9	0.6	0.6	0.6	0.6	0.5	0.3	0.7	1.0	0.5	0.6	0.6	0.6	1.0	0.8	0.7	0.6	0.1	0.3	0.4	0.2	0.0	0.5	0.5	0.3	0.4	0.6	0.6
5	1.0	0.8	0.5	0.8	0.6	0.8	0.5	0.7	0.6	0.6	0.4	0.4	0.9	1.0	0.6	0.4	0.4	0.6	0.9	0.8	0.6	0.6	0.1	0.2	0.3	0.1	0.1	0.5	0.2	0.3	0.3	0.5	0.5
6	0.9	0.5	0.3	0.8	0.4	0.8	0.3	0.4	0.5	0.4	0.3	0.3	0.7	0.8	0.4	0.1	0.3	0.4	0.7	0.9	0.3	0.5	0.1	0.1	0.1	0.0	0.1	0.2	0.2	0.0	0.0	0.4	0.3
7	0.4	0.1	0.2	0.6	0.2	0.7	0.3	0.0	0.0	0.1	0.1	0.1	0.5	0.3	0.1	0.7	0.2	0.1	0.1	0.7	0.4	0.1	0.7	0.5	0.2	0.3	0.1	0.2	0.8	0.5	0.7	0.1	0.2
8	0.1	0.5	0.5	0.6	0.5	0.6	0.6	0.4	0.3	0.5	0.6	0.1	0.5	0.2	0.7	0.9	0.6	0.6	0.1	0.6	0.8	0.6	1.2	0.9	0.6	0.4	0.1	0.6	0.8	0.9	1.0	0.4	0.5
9	0.5	0.8	0.8	0.5	0.4	0.4	0.8	0.7	0.6	0.8	1.1	0.4	0.3	0.7	1.1	1.1	0.9	0.9	0.1	0.4	1.0	0.9	1.5	1.3	0.8	0.7	0.3	1.0	0.9	1.2	1.3	0.6	0.9
10	0.7	1.0	1.0	0.2	0.1	0.3	0.9	0.8	0.7	1.0	1.5	0.6	0.1	0.9	1.2	1.3	1.0	1.1	0.4	0.1	1.1	1.1	1.7	1.5	1.0	1.0	0.3	1.2	1.2	1.4	1.5	0.8	1.1
11	0.7	1.0	1.0	0.2	0.0	0.1	1.0	0.9	0.8	1.0	1.7	0.6	0.1	1.0	1.3	1.3	1.1	1.2	0.6	0.0	1.3	1.3	1.9	1.5	1.2	1.2	0.2	1.4	1.5	1.7	1.7	1.0	1.2
12	0.7	0.9	1.1	0.2	0.1	0.0	1.1	1.1	0.9	1.1	1.8	0.7	0.2	1.0	1.4	1.3	1.2	1.3	0.7	0.1	1.5	1.5	2.1	1.7	1.5	1.3	0.3	1.5	1.6	1.8	1.9	1.1	1.3
13	0.7	1.0	1.1	0.2	0.3	0.1	1.3	1.2	1.0	1.2	2.0	0.8	0.3	1.0	1.4	1.4	1.4	1.4	0.8	0.3	1.6	1.7	2.2	1.8	1.7	1.3	0.4	1.7	1.8	1.9	2.0	1.2	1.4
14	0.6	1.0	1.1	0.1	0.3	0.1	1.2	1.4	1.1	1.3	2.1	0.9	0.3	1.2	1.5	1.5	1.5	1.5	0.9	0.3	1.8	1.8	2.3	1.9	1.8	1.4	0.6	1.8	1.8	2.0	2.1	1.3	1.5
15	0.7	1.1	1.1	0.1	0.3	0.2	1.3	1.3	1.2	1.5	2.3	0.9	0.3	1.2	1.5	1.6	1.5	1.5	0.9	0.4	1.9	2.0	2.3	1.9	2.0	1.5	0.6	2.1	1.9	2.0	2.1	1.3	1.6
16	0.6	1.0	1.0	0.1	0.4	0.4	1.4	1.2	1.3	1.6	2.3	1.0	0.3	1.1	1.6	1.6	1.5	1.5	1.0	0.5	1.8	2.0	2.3	1.9	1.9	1.5	0.6	2.3	1.9	2.0	2.0	1.3	1.6
17	0.6	1.0	0.9	0.2	0.4	0.3	1.3	1.1	1.4	1.6	2.1	1.1	0.4	1.2	1.5	1.6	1.5	1.4	1.0	0.5	1.8	1.9	2.3	1.7	1.8	1.6	0.7	2.2	1.8	2.0	2.1	1.3	1.6
18	0.5	1.0	0.8	0.2	0.3	0.4	1.2	1.0	1.3	1.5	2.0	1.0	0.5	1.2	1.4	1.4	1.4	1.2	1.0	0.6	1.7	1.8	2.2	1.5	1.6	1.7	0.8	2.1	1.7	1.8	1.8	1.2	1.4
19	0.5	0.9	0.7	0.2	0.2	0.4	1.0	0.9	1.2	1.4	1.8	0.8	0.4	1.0	1.2	1.3	1.2	1.2	0.9	0.6	1.6	1.6	2.0	1.4	1.4	1.7	0.8	2.0	1.8	1.7	1.6	1.1	1.3
20	0.4	0.9	0.7	0.4	0.1	0.4	0.8	0.8	1.1	1.3	1.6	0.6	0.2	0.9	1.0	1.1	0.9	1.1	0.8	0.5	1.4	1.5	1.9	1.2	1.2	1.5	0.7	1.8	1.7	1.5	1.3	1.0	1.2
21	0.4	0.8	0.7	0.3	0.2	0.4	0.7	0.6	1.0	1.2	1.4	0.5	0.1	0.9	1.0	1.1	0.9	0.9	0.7	0.6	1.4	1.4	1.7	1.0	1.0	1.4	0.6	1.7	1.6	1.4	1.2	0.9	1.1
22	0.4	0.7	0.6	0.3	0.2	0.3	0.5	0.4	0.8	1.0	1.2	0.3	0.0	0.7	0.8	0.9	0.8	0.7	0.5	0.4	1.1	1.1	1.4	0.8	0.7	1.1	0.4	1.3	1.2	1.2	0.9	0.7	0.8
23	0.1	0.3	0.1	0.4	0.1	0.0	0.1	0.1	0.3	0.6	0.6	0.1	0.3	0.3	0.3	0.3	0.3	0.1	0.3	0.1	0.4	0.6	0.7	0.4	0.3	0.7	0.1	0.7	0.6	0.7	0.4	0.3	0.4
24	0.4	0.1	0.3	0.6	0.3	0.3	0.3	0.2	0.0	0.2	0.2	0.3	0.6	0.2	0.0	0.0	0.1	0.3	0.2	0.3	0.0	0.3	0.3	0.1	0.0	0.4	0.2	0.4	0.2	0.3	0.0	0.1	0.0
Ave.	0.1	0.4	0.4	0.4	0.1	0.2	0.5	0.4	0.5	0.7	1.0	0.3	0.1	0.4	0.7	0.8	0.7	0.6	0.2	0.0	0.8	0.8	1.3	0.9	0.8	0.8	0.3	1.0	1.0	1.0	1.0	0.5	0.7
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		



Retail Load less Generation Observations

- For Retail load, the Company is generally an importer of power during HLH and exporter during LLH.
- Daytime on Sundays is like any other HLH—Retail greater than Generation.
- During HLH, retail load can be 20-30% greater than generation.
- What are wholesale transactions like?

LTF Purchases (MW)

July 2003 LTF Input (MW)																														Ave.	6x16		
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	459	454	434	424	423	428	425	445	428	423	423	424	444	440	267	466	470	427	420	425	225	439	430	424	456	421	424	424	427	424	429	422	437
2	460	454	435	425	424	428	426	490	578	422	424	425	444	435	236	435	470	427	421	428	274	439	430	425	425	422	425	425	427	425	429	427	443
3	460	454	460	425	424	428	426	535	578	422	431	425	444	435	236	435	470	426	420	427	425	439	430	425	425	422	425	425	427	425	429	434	452
4	460	454	460	425	423	478	426	545	578	422	431	425	433	444	236	435	470	426	420	425	425	439	430	425	425	421	425	425	427	425	429	436	453
5	475	454	454	424	423	497	426	535	578	422	424	424	433	435	236	484	469	426	420	425	425	439	430	425	425	421	425	425	427	425	429	437	454
6	475	453	449	424	423	502	425	570	628	572	623	524	427	440	235	584	469	424	420	425	425	438	430	424	524	421	424	424	426	424	429	461	483
7	462	457	468	422	463	492	465	462	431	428	438	458	427	440	257	459	539	465	479	419	472	466	493	496	473	486	419	473	479	479	471	456	478
8	441	447	487	422	445	428	451	452	442	429	438	458	428	484	251	455	540	454	472	419	454	477	486	470	491	473	419	463	462	485	461	451	475
9	473	455	450	422	445	428	440	431	442	429	438	445	458	316	279	485	540	448	461	419	459	472	485	466	489	467	419	452	492	483	483	447	469
10	464	430	437	423	435	421	429	429	442	430	463	436	458	271	267	472	540	445	460	421	445	458	485	466	476	489	419	476	482	486	474	443	463
11	546	552	530	515	528	443	521	532	548	521	605	463	458	363	359	459	572	470	451	251	441	457	482	468	472	487	419	482	476	447	469	477	508
12	547	551	530	537	553	443	553	532	549	553	605	460	459	355	357	555	664	559	481	251	463	454	554	552	563	482	419	564	563	551	551	510	548
13	546	547	560	536	517	443	552	532	549	603	605	459	459	355	351	610	718	612	569	343	555	543	552	605	562	573	511	559	557	606	605	539	576
14	546	546	554	536	515	535	550	531	549	603	605	459	460	355	347	610	718	609	564	343	609	602	550	603	560	574	511	612	606	607	603	547	583
15	548	546	552	536	536	535	551	535	549	603	605	458	460	355	349	608	718	609	577	343	609	602	550	602	553	571	511	609	604	603	602	548	584
16	548	546	506	536	544	535	550	535	550	603	605	458	460	405	394	603	718	609	574	401	608	601	610	602	555	571	569	608	607	603	604	555	589
17	548	526	547	536	544	541	549	535	551	603	605	458	460	404	422	607	718	612	572	401	608	603	610	611	552	570	569	608	607	595	604	557	591
18	548	530	526	536	536	534	549	548	551	603	605	458	414	405	471	610	718	613	557	401	608	601	611	611	552	565	569	609	605	584	604	556	591
19	456	454	438	444	444	534	464	456	459	511	513	426	414	312	389	610	717	615	472	401	593	601	558	613	550	476	569	610	613	608	610	514	543
20	474	464	458	422	422	442	464	439	459	461	438	427	306	263	386	529	686	594	466	401	609	614	466	521	465	467	569	510	525	490	490	475	503
21	445	432	439	422	421	442	465	439	459	429	438	427	261	270	431	469	632	524	357	251	432	464	478	465	473	469	419	452	432	431	432	432	464
22	448	453	444	422	426	442	435	440	442	429	438	427	261	238	474	472	540	438	443	219	440	460	458	471	448	454	419	424	438	442	433	426	458
23	466	461	446	424	423	442	425	441	428	423	424	454	229	223	467	466	502	423	452	234	471	464	462	456	424	421	421	419	459	465	424	424	456
24	434	429	435	424	423	428	425	445	428	423	456	453	428	223	467	466	428	423	420	234	437	439	462	424	424	421	423	424	427	440	474	422	446
Ave	489	481	479	461	465	470	475	493	508	490	503	447	414	361	340	516	584	503	473	363	480	500	497	502	490	481	463	496	500	498	499	475	502

LTF Sales (MW)

(Red values are leaving the system)

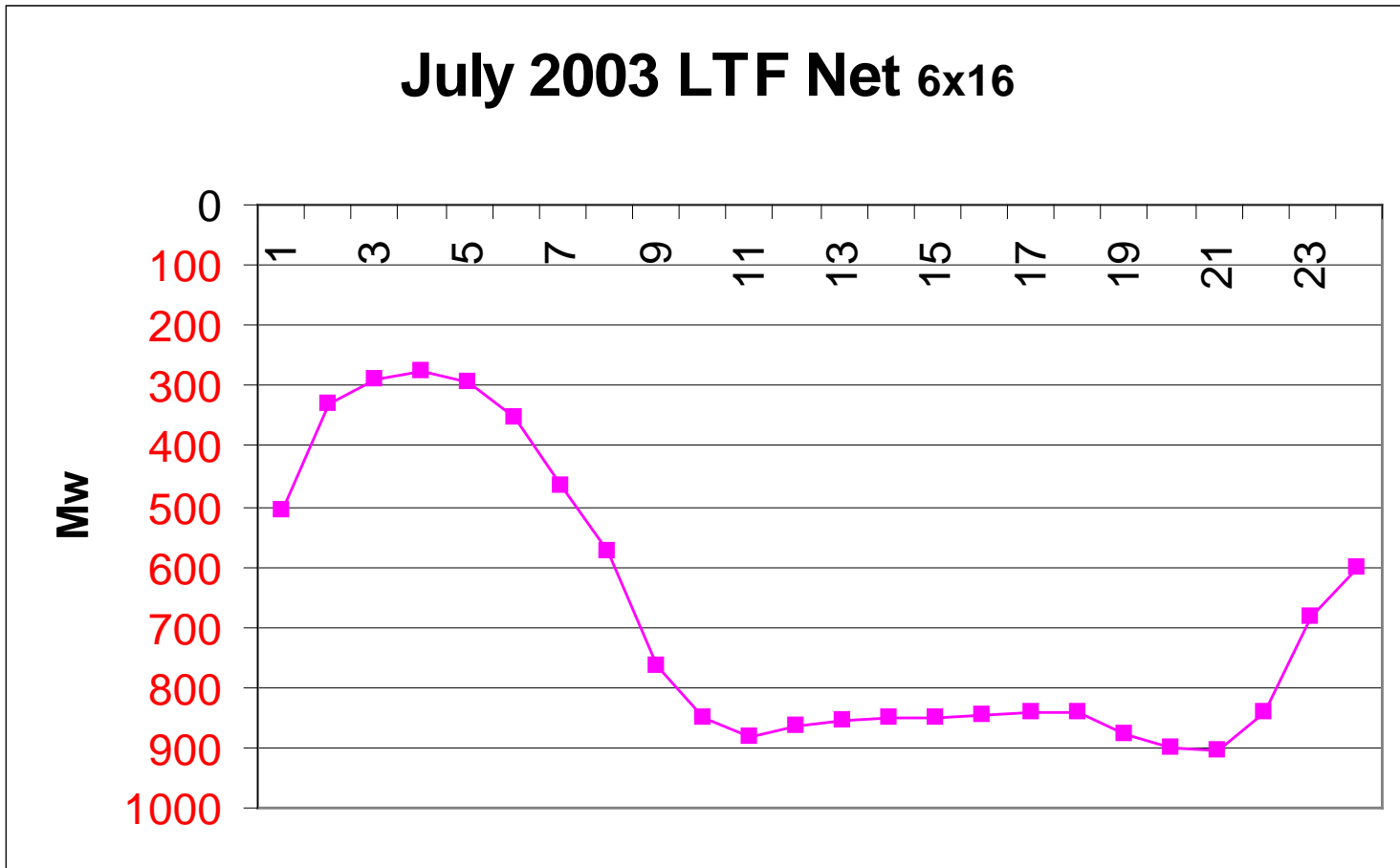
July 2003 LTF Output (MW)																																	
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	847	763	762	803	771	836	754	734	921	800	901	882	684	668	984	903	1010	959	887	835	818	1046	1092	1099	1103	899	954	873	1071	985	1054	893	943
2	819	676	726	785	707	762	685	704	713	640	764	742	664	614	726	824	820	741	745	812	805	728	751	766	767	760	923	732	772	783	817	751	773
3	801	657	670	735	701	692	707	687	697	645	683	686	680	640	650	839	767	621	740	773	739	722	716	732	738	731	878	737	683	805	708	718	740
4	803	654	647	736	730	640	756	699	699	679	653	678	711	673	621	764	744	597	686	858	713	789	700	729	714	659	855	742	618	792	660	710	728
5	783	725	655	761	760	669	715	723	708	690	681	708	711	719	671	849	814	607	668	792	790	734	708	747	719	654	882	750	663	796	683	727	749
6	777	763	721	724	743	696	800	791	825	854	787	751	742	730	756	918	907	704	698	796	904	762	815	852	753	816	926	817	802	900	931	799	835
7	1156	845	838	833	878	737	892	849	887	889	1019	947	824	1021	820	957	971	810	897	868	932	920	853	914	866	823	726	878	875	879	1035	892	946
8	1125	1036	1082	1036	897	662	954	936	898	1109	1007	908	910	1265	1229	1112	1237	913	919	858	974	929	939	1047	888	815	716	1009	951	1035	1012	981	1049
9	1267	1358	1367	1111	1971	724	974	1061	1080	1200	1231	1157	1133	1378	1268	1197	1291	1188	1036	1085	1151	1204	1208	1204	1167	992	1041	1204	1188	1309	1213	1160	1235
10	1267	1326	1284	1073	995	866	1114	1581	1247	1241	1290	1111	1074	1388	1296	1247	1342	1263	1131	1141	1162	1255	1307	1296	1317	1077	1164	1273	1298	1377	1352	1231	1313
11	1370	1328	1322	1136	1113	886	1315	1537	1339	1358	1406	1199	1184	1392	1366	1336	1477	1357	1208	1141	1336	1379	1358	1357	1382	1203	1230	1277	1332	1376	1357	1302	1391
12	1346	1352	1344	1187	1156	902	1384	1527	1370	1473	1458	1249	1202	1408	1382	1382	1476	1357	1199	1172	1348	1380	1337	1363	1382	1236	1204	1327	1357	1378	1384	1323	1414
13	1383	1377	1371	1272	1156	980	1389	1534	1372	1474	1500	1255	1234	1399	1382	1382	1488	1357	1301	1216	1382	1379	1338	1371	1378	1310	1259	1379	1357	1378	1387	1346	1431
14	1383	1384	1371	1274	1156	1055	1399	1529	1373	1475	1466	1258	1263	1394	1382	1382	1485	1357	1303	1215	1387	1381	1358	1378	1373	1315	1261	1377	1382	1378	1395	1351	1433
15	1383	1384	1378	1272	1164	1088	1395	1527	1373	1479	1503	1257	1257	1382	1382	1382	1487	1357	1304	1240	1382	1380	1361	1385	1371	1321	1261	1378	1378	1381	1387	1354	1434
16	1383	1389	1392	1274	1161	1089	1398	1519	1365	1472	1470	1268	1264	1385	1382	1382	1500	1357	1307	1253	1384	1381	1356	1386	1372	1319	1262	1380	1378	1378	1389	1355	1434
17	1388	1385	1382	1279	1162	1090	1395	1494	1362	1499	1461	1270	1267	1389	1382	1382	1495	1357	1307	1255	1389	1380	1356	1379	1370	1319	1264	1384	1378	1378	1387	1354	1433
18	1382	1381	1382	1280	1184	1086	1393	1474	1364	1499	1509	1272	1263	1382	1385	1382	1489	1357	1307	1255	1387	1382	1356	1371	1368	1320	1256	1386	1378	1378	1393	1355	1434
19	1376	1309	1378	1270	1184	1048	1395	1471	1354	1466	1352	1198	1260	1379	1385	1382	1542	1357	1307	1183	1314	1383	1357	1374	1367	1275	1248	1382	1378	1378	1442	1339	1419
20	1277	1191	1327	1184	1185	1087	1384	1463	1354	1466	1335	1194	1231	1377	1382	1382	1559	1284	1330	1183	1313	1381	1352	1363	1366	1254	1244	1377	1408	1378	1432	1324	1405
21	1280	1225	1285	1113	1180	1018	1335	1378	1274	1392	1294	1142	1231	1353	1347	1357	1489	1287	1244	1185	1262	1376	1343	1360	1377	1225	1246	1375	1319	1376	1372	1292	1370
22	1201	1202	1196	1116	1061	936	1235	1329	1221	1371	1283	1113	1183	1237	1332	1288	1358	1262	1212	1177	1262	1291	1266	1230	1286	1175	1170	1301	1208	1261	1291	1228	1299
23	937	1030	1033	989	863	858	864	1105	1006	1155	1126	1079	1132	1113	1218	1165	1194	1138	1083	1109	1104	1150	1141	1149	1152	1115	1131	1198	1106	1103	1099	1085	1137
24	914	844	818	799	828	756	820	864	970	862	892	894	913	921	1164	1022	1200	1111	1895	1073	1100	1088	1087	1134	1129	1221	1063	1183	1067	1125	1093	995	1050
ave.	1152	1108	1114	1044	988	882	1102	1188	1115	1175	1170	1051	1042	1150	1162	1176	1256	1112	1071	1061	1139	1158	1144	1166	1154	1076	1090	1155	1139	1179	1178	1119	1183

Net LTF (MW)

(Red values are leaving the system)

		July 2003 LTF Net (MW)																															
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	388	309	328	379	348	408	329	289	493	377	478	458	240	228	717	437	540	532	467	410	593	607	662	675	647	478	530	449	644	561	625	472	506
2	359	222	291	360	283	334	259	214	135	218	340	317	220	179	490	389	350	314	324	384	531	289	321	341	342	338	498	307	345	358	388	324	330
3	341	203	210	310	277	264	281	152	119	223	252	261	236	205	414	404	297	195	320	346	314	283	286	307	313	309	453	312	256	380	279	284	288
4	343	200	187	311	307	162	330	154	121	257	222	253	278	229	385	329	274	171	266	433	288	350	270	304	289	238	430	317	191	367	231	274	275
5	308	271	201	337	337	172	289	188	130	268	257	284	278	284	435	365	345	181	248	367	365	295	278	322	294	233	457	325	236	371	254	290	295
6	302	310	272	300	320	194	375	221	197	282	164	227	315	290	521	334	438	280	278	371	479	324	385	428	229	395	502	393	376	476	502	338	352
7	694	388	370	411	415	245	427	387	456	461	581	489	397	581	563	498	432	345	418	449	460	454	360	418	393	337	307	405	396	400	564	436	468
8	684	589	595	614	452	234	503	484	456	680	569	450	482	781	978	657	697	459	447	439	520	452	453	577	397	342	297	546	489	550	551	530	574
9	794	903	917	689	526	296	534	630	638	771	793	712	675	1062	989	712	751	740	575	666	692	732	723	738	678	525	622	752	696	826	730	712	766
10	803	896	847	650	560	445	685	1152	805	811	827	675	616	1117	1029	775	802	818	671	720	717	797	822	830	841	588	745	797	816	891	878	788	850
11	824	776	792	621	585	443	794	1005	791	837	801	736	726	1029	1007	877	905	887	757	890	895	922	876	889	910	716	811	795	856	929	888	825	883
12	799	801	814	650	603	459	831	995	821	920	853	789	743	1053	1025	827	812	798	718	921	885	926	783	811	819	754	785	763	794	827	833	813	866
13	837	830	811	736	639	537	837	1002	823	871	895	796	775	1044	1031	772	770	745	732	873	827	836	786	766	816	737	748	820	800	772	782	808	855
14	837	838	817	738	641	520	849	998	824	872	861	799	803	1039	1035	772	767	748	739	872	778	779	808	775	813	741	750	765	776	771	792	804	849
15	835	838	826	736	628	553	844	992	824	876	898	799	797	1027	1033	774	769	748	727	897	773	778	811	783	818	750	750	769	774	778	785	806	850
16	835	843	886	738	617	554	848	984	815	869	865	810	804	980	988	779	782	748	733	852	776	780	746	784	817	748	693	772	771	775	785	799	845
17	840	859	835	743	618	549	846	959	811	896	856	812	807	985	960	775	777	745	735	854	781	777	746	768	818	749	695	776	771	783	783	797	842
18	834	851	856	744	648	552	844	926	813	896	904	814	849	977	914	772	771	744	750	854	779	781	745	760	816	755	687	777	773	794	789	799	843
19	920	855	940	826	740	514	931	1015	895	955	839	772	846	1067	996	772	825	742	835	782	721	782	799	761	817	799	679	772	765	770	832	825	877
20	803	727	869	762	763	645	920	1024	895	1005	897	767	925	1114	996	853	873	690	864	782	704	767	886	842	901	787	675	867	883	888	942	849	901
21	835	793	846	696	759	576	870	939	815	963	856	715	970	1083	916	888	857	763	887	934	830	912	865	895	904	756	827	923	887	945	940	860	906
22	753	749	752	694	635	494	800	889	779	942	845	691	922	999	858	816	818	824	769	958	822	831	808	759	838	721	751	877	770	819	858	801	841
23	471	569	587	565	440	416	439	664	578	732	702	625	903	890	751	699	692	715	631	875	633	686	679	693	728	694	710	779	647	638	675	661	681
24	480	415	383	375	405	328	395	419	542	439	436	441	485	698	697	556	772	688	475	839	663	649	625	710	705	800	640	759	640	685	619	573	604
ave.	663	626	635	583	523	412	628	695	607	684	666	604	629	789	822	660	672	609	599	699	659	658	647	664	664	595	627	659	640	681	679	644	681

Net LTF 6x16





Net LTF Observations

- PacifiCorp was a net exporter of LTF during every hour of July 2003.
- Net LTF transactions add another 10% (8-900 Mw) to the 6x16 System load.
- On average, LTF is more “peaky” than retail load—requiring more HLH input than that required for Retail alone.

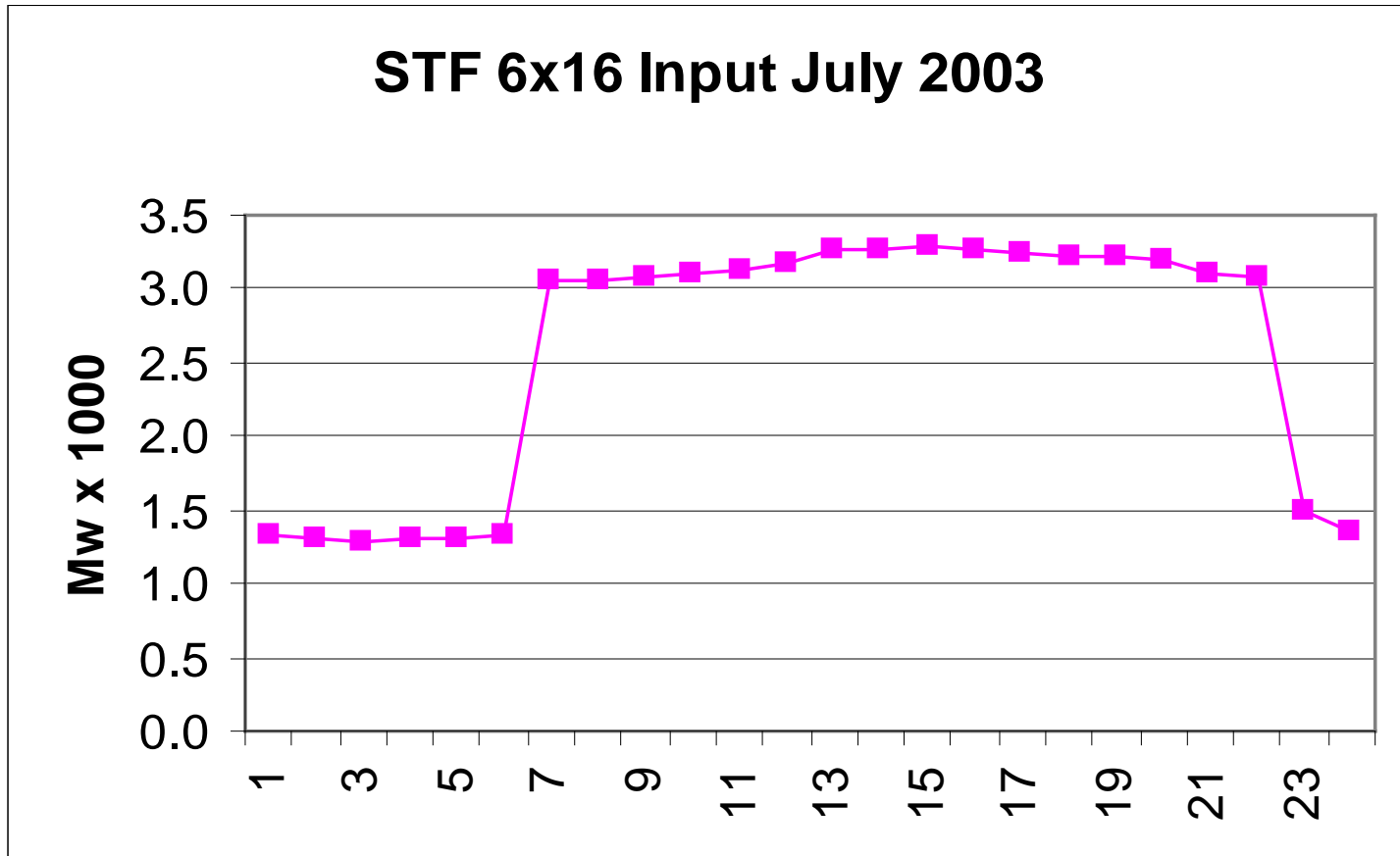
Retail plus LTF less Generation (Mw)

July 2003 Retail plus LTF less Generation																																Ave.	6x16
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	173	119	392	337	1	249	337	374	378	538	861	843	419	144	638	689	967	742	426	456	228	686	1042	1096	894	887	1280	350	1043	892	977	586	617
2	44	116	190	153	115	98	268	246	91	164	476	594	297	417	203	353	476	368	40	399	208	182	737	645	334	720	992	129	545	498	580	300	294
3	153	365	107	119	101	80	228	140	63	72	254	476	243	356	3	221	267	121	119	148	169	107	602	476	333	562	836	166	291	516	318	183	176
4	231	282	110	164	41	242	162	69	51	53	155	393	38	335	106	166	174	36	283	88	48	201	591	436	344	505	849	232	163	469	218	140	141
5	267	39	160	74	176	162	213	72	83	131	256	303	144	259	67	436	365	34	250	39	221	97	590	510	421	545	809	300	467	488	377	192	220
6	109	285	454	97	316	128	489	360	331	413	479	493	21	37	373	866	579	271	3	94	637	303	933	961	630	810	873	612	1010	903	944	448	532
7	772	908	1007	195	654	47	1224	861	890	960	1146	1030	358	767	960	1617	1205	884	821	132	1344	1024	1554	1391	1112	1139	790	1109	1675	1376	1744	990	1167
8	1222	1501	1559	429	412	98	1593	1344	1164	1591	1636	994	413	1510	1895	2027	1821	1481	829	239	1745	1543	2094	1918	1452	1249	855	1612	1768	1936	1969	1352	1595
9	1755	2148	2148	573	616	281	1822	1808	1649	1966	2304	1511	798	2103	2325	2328	2224	2078	1150	666	2124	2080	2662	2493	1933	1652	1328	2242	2129	2459	2546	1803	2090
10	1986	2346	2310	834	853	573	1966	2365	1995	2259	2763	1665	990	2257	2467	2549	2364	2339	1501	1010	2233	2347	3031	2814	2326	2027	1436	2510	2537	2785	2866	2074	2378
11	2113	2330	2358	980	1121	778	2301	2438	2178	2398	3098	1820	1326	2370	2630	2629	2607	2595	1815	1166	2657	2645	3262	2852	2570	2373	1416	2674	2787	3056	3056	2271	2589
12	2019	2247	2404	980	1240	947	2530	2579	2238	2622	3262	1951	1416	2390	2794	2666	2665	2678	1946	1308	2883	2874	3399	3014	2872	2512	1504	2876	3006	3171	3299	2397	2726
13	2043	2353	2485	1058	1408	1040	2656	2781	2388	2720	3518	2075	1569	2417	2830	2832	2858	2790	2105	1505	3004	3053	3563	3164	3073	2611	1703	3053	3145	3325	3427	2534	2867
14	1993	2428	2456	1164	1411	1176	2648	2884	2463	2819	3608	2152	1601	2565	2858	2851	2977	2869	2180	1544	3218	3193	3637	3259	3201	2678	1866	3195	3213	3336	3481	2610	2943
15	2037	2444	2440	1169	1428	1337	2714	2854	2583	3008	3802	2192	1534	2619	2929	2954	3008	2856	2244	1689	3278	3372	3638	3269	3363	2776	1909	3459	3254	3370	3529	2679	3017
16	2031	2397	2350	1165	1568	1474	2824	2679	2698	3027	3724	2272	1554	2515	2938	2959	3021	2857	2328	1720	3211	3344	3676	3315	3278	2863	1878	3672	3282	3365	3436	2691	3025
17	2030	2379	2272	1125	1606	1437	2684	2600	2719	3107	3604	2335	1652	2564	2889	3006	3003	2709	2351	1803	3199	3302	3656	3100	3196	2885	1986	3617	3226	3334	3459	2672	2993
18	1925	2332	2155	1085	1511	1467	2583	2463	2656	3006	3534	2232	1718	2575	2754	2821	2841	2596	2317	1859	3102	3187	3528	2916	3018	3023	2062	3515	3128	3190	3183	2590	2884
19	1891	2206	2041	1032	1382	1476	2375	2383	2604	2893	3122	1972	1672	2347	2616	2663	2695	2561	2206	1745	2876	3022	3362	2802	2744	2958	2021	3411	3153	3078	3041	2463	2736
20	1701	2110	2006	830	1265	1497	2199	2215	2428	2779	2912	1771	1426	2294	2428	2514	2494	2344	2122	1666	2729	2841	3231	2562	2596	2789	1948	3187	3114	2895	2771	2312	2572
21	1715	2013	2014	788	1339	1421	2071	1932	2275	2612	2660	1624	1373	2235	2352	2458	2379	2147	1925	1738	2614	2751	3062	2360	2390	2591	1887	3056	2943	2823	2550	2197	2436
22	1565	1898	1809	857	1258	1202	1713	1731	2048	2334	2447	1372	1230	1950	2089	2174	2147	1925	1718	1582	2396	2386	2632	2016	2008	2227	1594	2647	2440	2430	2206	1936	2143
23	863	1330	1142	548	808	857	937	1194	1304	1710	1705	966	822	1392	1491	1461	1501	1241	1366	1227	1534	1757	1885	1503	1423	1798	1191	1891	1701	1805	1539	1351	1490
24	492	754	553	176	481	461	561	653	942	1078	1113	577	333	770	1181	1071	1114	827	672	781	1117	1346	1368	1269	1156	1670	815	1552	1231	1396	1130	924	1043
ave.	1230	1489	1538	650	862	721	1629	1626	1592	1844	2185	1401	941	1504	1826	1930	1906	1720	1309	1017	1949	1985	2406	2089	1944	1910	1409	2128	2135	2204	2194	1654	1861

STF Purchase (MW x 1,000)

		July 2003 STF Input																															
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave	6x16
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	1.2	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.2	1.1	1.1	1.8	1.8	1.2	1.4	1.2	1.1	1.1	1.3	1.3	1.2	1.2	1.6	1.7	1.6	1.6	1.5	1.4	1.4	1.5	1.3	1.3
2	1.2	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.2	1.1	1.1	1.8	1.8	1.2	1.3	1.2	1.1	1.1	1.3	1.3	1.1	1.2	1.6	1.6	1.6	1.5	1.5	1.2	1.4	1.4	1.3	1.3
3	1.2	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.0	1.2	1.1	1.1	1.8	1.8	1.1	1.2	1.2	1.1	1.1	1.3	1.3	1.1	1.2	1.6	1.6	1.6	1.5	1.5	1.2	1.4	1.4	1.3	1.3
4	1.2	1.0	1.0	1.1	1.1	1.1	1.2	1.0	1.0	1.2	1.1	1.1	1.8	1.8	1.1	1.2	1.2	1.1	1.1	1.4	1.3	1.1	1.3	1.6	1.6	1.6	1.5	1.5	1.2	1.4	1.4	1.3	1.3
5	1.2	1.0	1.0	1.1	1.1	1.2	1.1	1.0	1.0	1.2	1.1	1.1	1.8	1.8	1.1	1.2	1.2	1.1	1.1	1.4	1.3	1.1	1.2	1.6	1.6	1.6	1.5	1.5	1.2	1.4	1.4	1.3	1.3
6	1.2	1.0	1.1	1.2	1.2	1.3	1.1	1.0	1.0	1.2	1.1	1.1	1.8	1.8	1.3	1.2	1.2	1.1	1.4	1.4	1.3	1.1	1.3	1.6	1.6	1.6	1.6	1.6	1.2	1.4	1.4	1.3	1.3
7	2.3	2.6	2.6	1.8	2.4	1.8	2.8	2.9	3.1	3.0	2.7	2.7	2.7	2.8	2.8	3.2	2.9	2.7	2.7	2.3	2.9	2.9	3.0	3.1	3.3	3.3	2.2	3.4	3.6	3.2	3.4	2.8	3.1
8	2.3	2.6	2.6	1.8	2.4	1.8	2.9	2.9	3.1	3.0	2.7	2.7	2.7	2.8	2.8	3.2	2.9	2.8	2.7	2.1	3.0	2.9	3.0	3.1	3.3	3.3	2.2	3.4	3.6	3.2	3.3	2.8	3.1
9	2.3	2.6	2.6	1.8	2.4	1.8	2.8	2.9	3.1	3.0	2.7	2.7	2.7	2.8	3.0	3.2	2.9	2.7	2.7	2.1	2.9	2.9	3.0	3.3	3.3	3.3	2.2	3.4	3.6	3.2	3.3	2.8	3.1
10	2.3	2.6	2.6	1.8	2.4	1.8	2.8	2.9	3.1	3.0	3.0	2.7	2.8	2.8	3.2	3.2	2.9	2.7	2.8	2.1	2.9	2.9	3.0	3.3	3.5	3.3	2.2	3.5	3.6	3.2	3.4	2.8	3.1
11	2.3	2.6	2.6	1.8	2.4	1.8	3.0	3.1	3.1	3.0	3.4	2.7	2.8	2.8	3.4	3.2	2.9	2.7	2.7	2.2	3.0	2.9	3.0	3.1	3.3	3.3	2.2	3.4	3.6	3.2	3.3	2.9	3.1
12	2.3	2.6	2.7	1.8	2.4	1.8	2.9	3.1	3.1	3.1	3.7	2.7	2.8	2.9	3.6	3.2	2.9	2.7	2.7	2.2	3.0	2.9	3.0	3.2	3.3	3.5	2.2	3.5	3.6	3.2	3.7	2.9	3.2
13	2.4	2.8	2.8	1.8	2.5	1.9	3.0	3.2	3.3	3.1	3.8	2.9	2.8	3.2	3.3	3.3	2.9	3.0	2.8	2.3	3.0	3.0	3.1	3.3	3.5	3.4	2.6	3.5	3.6	3.2	3.6	3.0	3.3
14	2.4	2.8	2.8	1.9	2.5	2.0	3.1	3.0	3.3	3.1	3.6	2.9	2.8	3.1	3.3	3.3	2.9	2.8	2.8	2.3	3.0	3.0	3.1	3.4	3.5	3.5	2.6	3.6	3.6	3.3	3.6	3.0	3.3
15	2.4	2.8	2.8	1.9	2.5	1.9	3.1	3.0	3.3	3.2	3.5	2.9	2.8	3.2	3.5	3.3	2.9	2.8	2.8	2.4	3.0	3.0	3.1	3.3	3.7	3.5	2.6	3.7	3.8	3.4	3.6	3.0	3.3
16	2.4	2.8	2.8	1.9	2.5	1.9	3.2	3.0	3.3	3.2	3.3	2.9	2.8	3.2	3.2	3.3	2.9	2.9	2.8	2.4	3.1	3.0	3.1	3.3	3.7	3.4	2.6	3.5	3.7	3.4	3.7	3.0	3.3
17	2.4	2.8	2.8	1.9	2.5	1.9	3.1	3.0	3.3	3.2	3.2	2.9	2.8	3.0	3.2	3.3	2.9	2.9	2.8	2.7	3.0	3.0	3.2	3.3	3.6	3.4	2.6	3.5	3.7	3.3	3.7	3.0	3.2
18	2.4	2.8	2.8	1.9	2.5	1.9	3.3	3.0	3.3	3.2	3.2	2.9	2.8	2.9	3.1	3.3	2.9	2.9	2.8	2.7	3.0	3.0	3.1	3.3	3.5	3.5	2.6	3.5	3.6	3.3	3.6	3.0	3.2
19	2.4	2.8	2.8	1.8	2.4	1.9	3.0	3.0	3.3	3.2	3.1	2.9	2.8	2.9	3.2	3.3	2.9	2.9	2.8	2.6	3.0	3.0	3.1	3.3	3.4	3.4	2.6	3.5	3.6	3.3	3.6	3.0	3.2
20	2.3	2.8	2.8	1.8	2.4	1.8	2.9	3.0	3.3	3.2	3.1	2.9	2.8	3.1	2.9	3.3	2.9	2.8	2.8	2.5	3.0	3.0	3.1	3.2	3.3	3.3	2.6	3.5	3.6	3.4	3.3	2.9	3.2
21	2.3	2.7	2.7	1.8	2.4	1.8	2.8	2.9	3.1	3.1	3.0	2.7	2.8	2.9	2.9	3.3	2.9	2.7	2.7	2.3	3.2	3.2	3.0	3.1	3.3	3.3	2.5	3.6	3.6	3.2	3.3	2.9	3.1
22	2.3	2.6	2.7	1.8	2.4	1.8	2.8	2.9	3.1	3.0	2.8	2.7	2.8	2.9	2.8	3.3	3.0	2.7	2.8	2.1	2.9	3.0	3.0	3.1	3.3	3.3	2.2	3.6	3.6	3.2	3.3	2.8	3.1
23	1.2	1.1	1.0	1.2	1.2	1.1	1.2	1.0	1.5	1.3	1.5	1.2	1.8	1.9	1.2	1.3	1.3	1.3	1.4	1.3	1.5	1.5	1.7	1.8	1.8	1.8	1.6	1.7	1.3	1.7	1.8	1.4	1.5
24	1.2	1.1	1.0	1.1	1.2	1.1	1.2	1.0	1.1	1.2	1.1	1.1	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.3	1.4	1.3	1.4	1.6	1.6	1.7	1.5	1.5	1.2	1.6	1.5	1.3	1.3
Ave	2.0	2.2	2.2	1.6	2.0	1.6	2.4	2.3	2.5	2.5	2.5	2.2	2.5	2.6	2.5	2.6	2.3	2.3	2.2	2.0	2.4	2.4	2.5	2.7	2.8	2.8	2.1	2.9	2.8	2.7	2.8	2.4	2.6

STF Purchases 6x16



STF Purchases 6x16

Observations

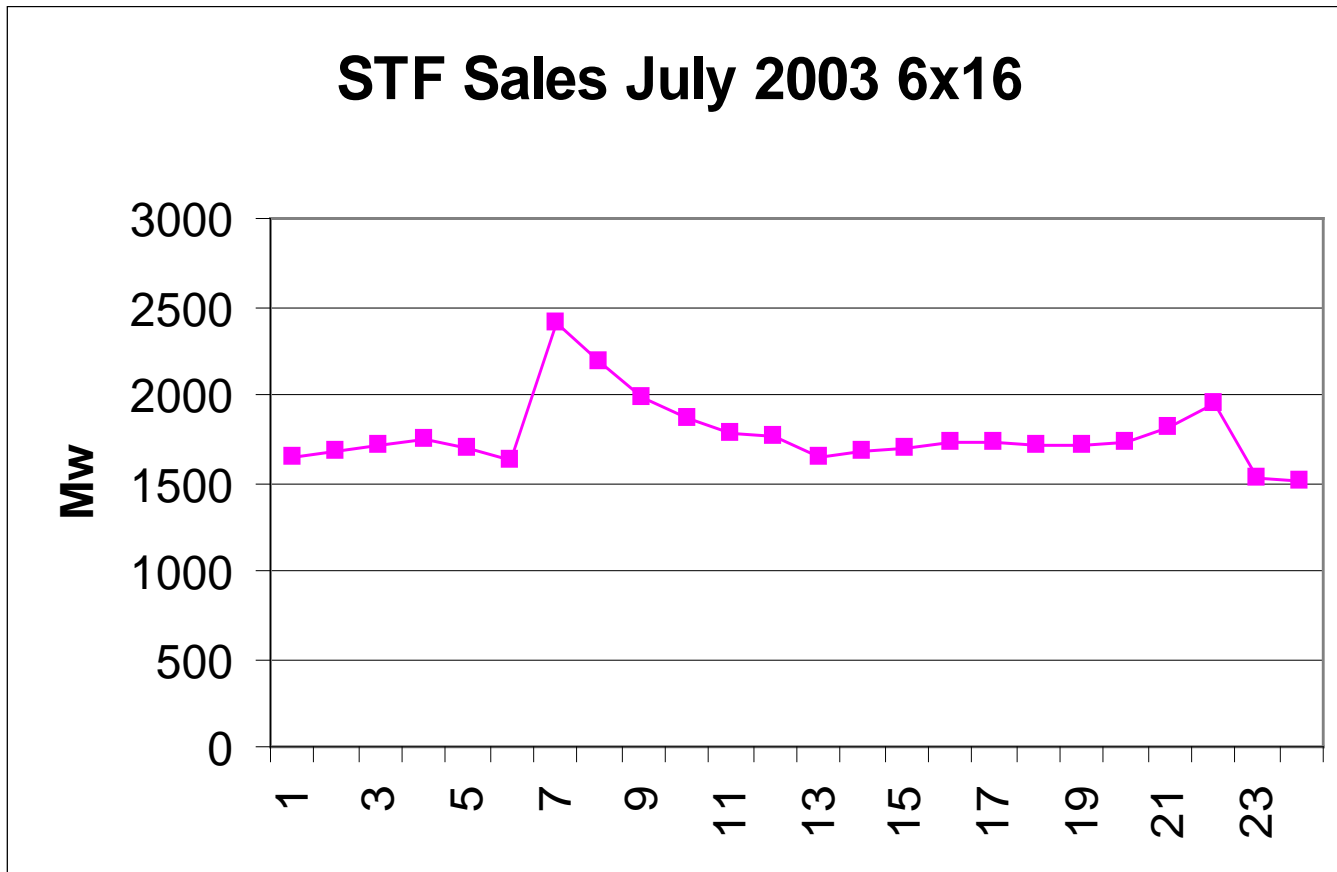
- STF Purchases are 2.5 times greater during HLH than LLH with a well defined line of demarcation.
- STF Purchases are significant in size with the HLH purchases being 40% of the Retail load and 45% of system generation.
- STF Purchases are 25% of Retail load during LLH and 22% of system generation.
- PacifiCorp has more generation than Retail load during LLH, but it purchases 1,300 Mw's of STF.

STF Sales (MW x 1,000)

(Red values leaving the system)

		July 2003 STF Output																															
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave	6x16
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	1.7	2.1	2.0	1.8	1.6	1.4	1.4	1.4	1.7	1.4	1.4	1.7	2.3	2.8	1.8	1.3	1.3	1.3	1.6	1.6	1.3	1.4	1.3	1.4	1.7	1.6	1.2	1.5	1.4	1.5	1.6	1.6	1.6
2	1.9	2.2	1.6	1.8	1.6	1.5	1.4	1.4	1.7	1.4	1.5	1.6	2.0	2.7	1.8	1.6	1.4	1.4	1.6	1.6	1.3	1.4	1.3	1.7	1.9	1.6	1.2	1.7	1.3	1.5	1.5	1.6	1.7
3	1.9	2.0	1.8	1.7	1.7	1.5	1.4	1.6	1.8	1.5	1.6	1.5	2.2	2.7	1.6	1.6	1.5	1.3	1.6	1.7	1.5	1.4	1.4	1.7	2.0	1.8	1.2	1.7	1.2	1.6	1.4	1.6	1.7
4	1.7	2.0	1.6	1.7	1.7	1.6	1.4	1.5	1.8	1.5	1.7	1.6	2.4	2.7	1.5	1.6	1.6	1.5	1.8	1.7	1.7	1.4	1.5	1.8	2.0	1.8	1.2	1.7	1.2	1.5	1.5	1.7	1.7
5	1.8	1.9	1.6	1.7	1.7	1.6	1.3	1.5	1.8	1.4	1.6	1.4	2.3	2.6	1.6	1.5	1.5	1.6	1.8	1.7	1.7	1.5	1.3	1.8	2.0	1.8	1.2	1.6	1.2	1.6	1.5	1.6	1.7
6	1.8	1.9	1.7	1.7	1.5	1.6	1.2	1.4	1.8	1.5	1.5	1.4	2.3	2.7	1.6	1.4	1.5	1.6	1.8	2.1	1.4	1.3	1.3	1.5	1.6	1.7	1.2	1.7	1.2	1.5	1.4	1.6	1.6
7	2.0	2.4	2.1	1.8	2.2	1.8	1.9	2.5	2.5	2.3	2.1	2.9	2.6	2.8	2.1	2.2	2.2	2.1	2.2	2.2	1.9	2.3	2.2	2.7	2.9	2.6	1.4	2.6	2.2	2.2	2.0	2.3	2.4
8	1.8	2.2	2.1	1.8	2.2	1.9	2.2	2.1	2.2	2.3	2.3	2.2	2.4	2.1	1.9	1.8	2.4	1.8	2.3	2.3	1.7	2.2	1.8	1.9	2.5	2.6	1.4	2.4	2.3	1.7	2.0	2.1	2.2
9	1.5	1.9	1.9	2.1	2.3	2.0	1.9	1.8	2.1	2.1	1.8	1.7	2.0	1.8	1.9	1.9	2.0	1.9	2.0	2.1	1.6	2.1	2.0	1.8	1.9	2.2	1.4	1.8	2.2	1.6	2.0	1.9	2.0
10	1.5	1.9	1.9	1.9	2.2	2.1	2.0	1.8	2.0	1.8	1.8	1.7	2.0	1.8	1.8	1.9	1.8	2.0	2.0	1.9	1.5	1.8	1.4	1.6	1.9	1.7	1.4	1.5	2.0	1.6	1.9	1.8	1.9
11	1.5	2.0	1.6	1.9	2.2	1.8	1.8	1.6	1.8	1.7	1.7	1.7	1.9	1.7	1.8	1.8	1.5	1.8	1.8	1.6	1.5	1.6	1.4	1.6	1.8	1.6	1.4	1.6	1.8	1.6	1.9	1.7	1.8
12	1.6	1.8	1.6	1.8	2.4	1.7	1.8	1.5	1.8	1.8	1.7	1.7	1.7	1.8	1.8	1.9	1.4	1.8	1.5	1.6	1.4	1.4	1.4	1.6	1.8	1.6	1.4	1.6	1.9	1.5	1.9	1.7	1.8
13	1.6	1.8	1.7	1.9	2.4	1.7	1.6	1.4	1.6	1.7	1.6	1.6	1.7	1.7	1.6	1.7	1.4	1.5	1.3	1.9	1.3	1.4	1.3	1.4	1.6	1.5	1.5	1.4	1.8	1.3	1.7	1.6	1.6
14	1.7	1.8	1.8	1.9	2.4	1.7	1.6	1.5	1.8	1.7	1.5	1.7	1.7	1.7	1.7	2.0	1.4	1.4	1.3	1.7	1.3	1.4	1.3	1.4	1.6	1.5	1.5	1.5	2.0	1.4	1.7	1.6	1.7
15	1.7	1.8	2.0	1.9	2.4	1.6	1.6	1.5	1.8	1.6	1.5	1.7	1.7	1.8	1.7	2.0	1.5	1.2	1.3	1.6	1.4	1.4	1.3	1.4	1.6	1.5	1.5	1.5	2.0	1.4	1.7	1.6	1.7
16	1.9	1.9	1.9	1.8	2.5	1.7	1.6	1.7	2.0	1.6	1.5	1.7	1.9	1.7	1.8	2.0	1.6	1.3	1.3	1.6	1.3	1.4	1.3	1.4	1.6	1.5	1.5	1.6	1.9	1.5	1.7	1.7	1.7
17	1.9	1.8	2.1	1.8	2.5	1.7	1.6	1.7	2.0	1.6	1.5	1.7	1.8	1.7	1.7	2.0	1.6	1.2	1.2	1.6	1.3	1.4	1.3	1.4	1.5	1.5	1.6	1.6	2.0	1.5	1.8	1.7	1.7
18	1.9	1.8	1.9	2.0	2.4	1.6	1.7	1.6	2.0	1.6	1.5	1.8	1.8	1.6	1.7	2.0	1.7	1.4	1.2	1.7	1.3	1.4	1.3	1.4	1.5	1.5	1.5	1.8	1.8	1.4	1.7	1.7	1.7
19	1.8	1.9	1.8	2.0	2.2	1.6	1.7	1.4	2.0	1.6	1.6	1.8	1.7	1.7	1.7	1.9	2.0	1.4	1.3	1.7	1.4	1.4	1.3	1.6	1.5	1.5	1.5	1.7	1.7	1.6	1.7	1.7	1.7
20	1.9	2.1	1.7	1.6	2.1	1.6	1.6	1.5	2.1	1.6	1.6	1.9	1.9	1.7	1.7	1.9	2.0	1.4	1.2	1.5	1.4	1.3	1.4	1.7	1.7	1.5	1.5	1.5	1.7	1.5	1.7	1.7	1.7
21	1.8	1.9	1.9	1.5	2.1	1.6	1.7	1.6	2.1	1.6	1.8	2.0	2.1	1.7	1.8	1.9	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.7	1.6	1.4	1.6	2.0	1.5	1.8	1.7	1.8
22	1.9	1.9	2.1	1.5	2.0	1.7	1.9	1.9	2.2	1.7	1.9	2.1	2.0	1.8	1.9	1.9	2.1	1.6	1.9	1.5	1.5	1.9	1.5	1.8	1.9	1.8	1.5	1.8	2.2	1.5	2.0	1.8	1.9
23	2.2	1.5	1.6	1.4	1.9	1.6	1.5	1.5	1.7	1.3	1.4	1.9	1.6	1.7	1.4	1.3	1.3	1.4	1.5	1.3	1.2	1.2	1.3	1.4	1.3	1.3	1.2	1.2	1.2	1.5	1.4	1.5	1.5
24	2.0	1.8	1.9	1.7	1.8	1.6	1.5	1.4	1.6	1.3	1.4	1.6	1.9	1.6	1.4	1.3	1.3	1.3	1.4	1.2	1.3	1.2	1.3	1.5	1.3	1.3	1.2	1.2	1.2	1.5	1.4	1.5	1.5
Ave	1.8	1.9	1.8	1.8	2.1	1.7	1.6	1.6	1.9	1.6	1.7	1.8	2.0	2.0	1.7	1.8	1.7	1.5	1.6	1.7	1.4	1.5	1.4	1.6	1.8	1.7	1.4	1.7	1.7	1.5	1.7	1.7	1.8

STF Sales 6x16





STF Sales 6x16

Observations

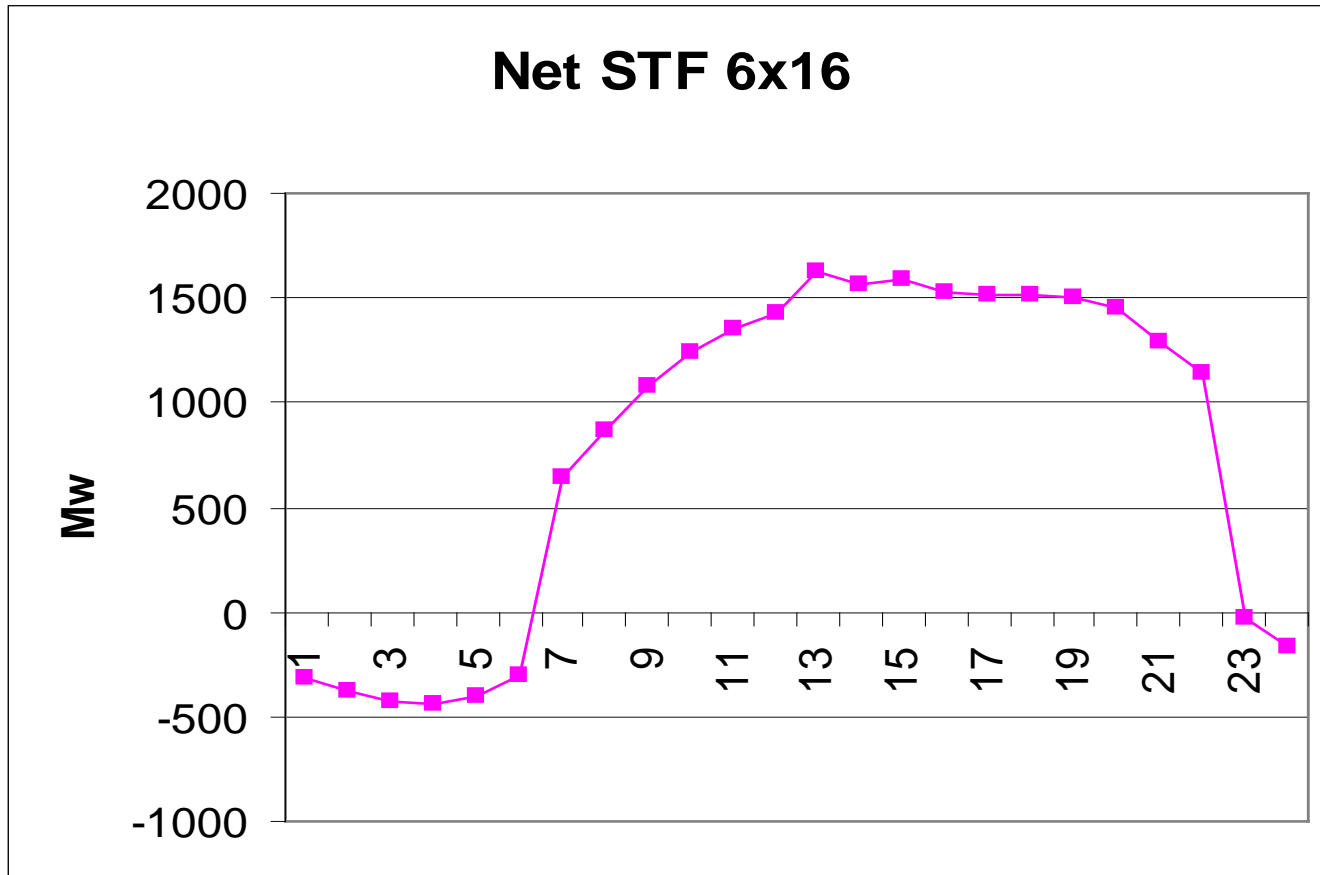
- STF Sales are relatively flat at 1,700 Mw.
- STF Sales increase by 700 Mw at the beginning of the HLH.
- The increase in STF Sales at 7:00 a.m. is only about $1/3^{\text{rd}}$ of the difference between Retail load at peak and at 7:00 a.m. (2,200 Mw).

STF Net (MW x 1,000)

(Red values leave the system)

July 2003 STF Net																																	
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16
Temp	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	98	
1	0.5	1.1	0.9	0.7	0.5	0.3	0.2	0.4	0.6	0.2	0.3	0.6	0.6	1.0	0.5	0.1	0.1	0.2	0.5	0.3	0.1	0.2	0.1	0.2	0.0	0.0	0.4	0.0	0.1	0.1	0.1	0.3	0.3
2	0.8	1.2	0.6	0.6	0.5	0.4	0.3	0.4	0.7	0.2	0.4	0.6	0.2	1.0	0.6	0.3	0.2	0.2	0.4	0.3	0.0	0.2	0.1	0.1	0.3	0.0	0.4	0.2	0.1	0.1	0.1	0.3	0.4
3	0.7	1.0	0.9	0.6	0.6	0.4	0.2	0.6	0.8	0.3	0.5	0.5	0.4	0.9	0.5	0.4	0.3	0.2	0.5	0.4	0.2	0.2	0.2	0.2	0.4	0.2	0.4	0.1	0.0	0.2	0.0	0.4	0.4
4	0.6	1.0	0.7	0.6	0.6	0.5	0.2	0.5	0.8	0.3	0.6	0.5	0.6	0.9	0.4	0.4	0.4	0.4	0.7	0.3	0.4	0.2	0.2	0.3	0.4	0.2	0.4	0.1	0.0	0.1	0.1	0.4	0.4
5	0.6	0.9	0.7	0.5	0.5	0.4	0.2	0.5	0.8	0.2	0.5	0.4	0.6	0.8	0.5	0.3	0.3	0.5	0.7	0.3	0.4	0.4	0.1	0.2	0.3	0.2	0.4	0.0	0.0	0.1	0.1	0.4	0.4
6	0.6	0.9	0.6	0.5	0.3	0.3	0.0	0.4	0.8	0.3	0.4	0.3	0.6	1.0	0.3	0.2	0.3	0.4	0.5	0.7	0.1	0.1	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.1	0.0	0.3	0.3
7	0.3	0.2	0.6	0.0	0.2	0.0	0.8	0.4	0.6	0.7	0.6	0.1	0.2	0.0	0.7	1.0	0.7	0.6	0.5	0.0	1.0	0.6	0.7	0.5	0.3	0.6	0.8	0.8	1.3	1.0	1.3	0.6	0.6
8	0.6	0.5	0.6	0.0	0.2	0.1	0.7	0.8	0.9	0.7	0.4	0.4	0.4	0.8	0.8	1.4	0.5	1.0	0.4	0.1	1.3	0.7	1.2	1.2	0.8	0.7	0.8	1.1	1.3	1.5	1.4	0.7	0.9
9	0.8	0.7	0.7	0.3	0.1	0.2	0.9	1.1	1.0	0.9	0.9	1.0	0.8	1.0	1.1	1.3	0.9	0.8	0.8	0.0	1.2	0.8	1.0	1.5	1.4	1.1	0.8	1.7	1.3	1.6	1.3	0.9	1.1
10	0.8	0.7	0.8	0.1	0.2	0.2	0.8	1.1	1.1	1.2	1.2	1.0	0.8	1.1	1.4	1.3	1.1	0.7	0.8	0.2	1.4	1.1	1.6	1.7	1.6	1.6	0.8	1.9	1.6	1.6	1.4	1.0	1.2
11	0.8	0.6	1.0	0.1	0.2	0.0	1.2	1.4	1.3	1.3	1.7	1.0	0.9	1.2	1.6	1.4	1.4	1.0	0.9	0.6	1.5	1.3	1.6	1.5	1.5	1.6	0.8	1.9	1.8	1.6	1.5	1.2	1.4
12	0.8	0.9	1.1	0.0	0.1	0.1	1.1	1.5	1.3	1.3	2.0	1.0	1.1	1.1	1.9	1.3	1.5	0.9	1.2	0.6	1.6	1.5	1.6	1.6	1.5	1.8	0.8	1.9	1.6	1.7	1.8	1.2	1.4
13	0.8	1.1	1.2	0.0	0.2	0.2	1.4	1.7	1.6	1.4	2.2	1.3	1.1	1.5	1.7	1.5	1.6	1.4	1.5	0.4	1.7	1.6	1.8	1.9	2.0	1.9	1.1	2.1	1.8	1.9	1.9	1.4	1.6
14	0.7	1.0	1.1	0.1	0.1	0.3	1.4	1.5	1.4	1.4	2.1	1.2	1.1	1.5	1.5	1.3	1.5	1.4	1.5	0.7	1.7	1.6	1.8	2.0	2.0	2.0	1.1	2.0	1.6	1.9	2.0	1.4	1.6
15	0.7	1.0	0.9	0.1	0.1	0.3	1.4	1.5	1.4	1.6	2.0	1.2	1.1	1.4	1.8	1.3	1.4	1.6	1.5	0.8	1.7	1.6	1.8	1.9	2.1	2.0	1.1	2.2	1.7	2.0	1.9	1.4	1.6
16	0.5	1.0	0.9	0.0	0.0	0.3	1.6	1.4	1.3	1.6	1.7	1.2	1.0	1.5	1.4	1.3	1.3	1.7	1.5	0.8	1.8	1.6	1.8	1.8	2.1	1.9	1.1	1.9	1.7	1.9	2.0	1.3	1.5
17	0.5	1.0	0.8	0.1	0.0	0.2	1.5	1.4	1.2	1.6	1.7	1.2	1.0	1.3	1.5	1.3	1.3	1.7	1.6	1.1	1.7	1.6	1.9	1.8	2.1	1.9	1.0	1.9	1.7	1.8	1.9	1.3	1.5
18	0.5	1.1	1.0	0.1	0.1	0.3	1.6	1.4	1.2	1.6	1.6	1.1	1.0	1.3	1.4	1.3	1.3	1.5	1.6	1.0	1.7	1.6	1.8	1.8	2.0	2.1	1.1	1.7	1.8	1.9	1.9	1.3	1.5
19	0.6	1.0	1.1	0.2	0.3	0.2	1.3	1.5	1.2	1.6	1.5	1.0	0.9	1.4	1.3	1.4	1.0	1.4	1.6	0.9	1.5	1.7	1.7	1.5	1.6	1.9	1.1	2.0	1.9	1.9	1.7	1.3	1.5
20	0.4	0.7	0.8	0.3	0.3	0.2	1.1	1.3	1.0	1.5	1.2	0.7	0.7	1.2	1.1	1.3	0.9	1.2	1.2	0.7	1.6	1.7	1.6	1.5	1.6	1.7	1.1	2.0	1.6	1.7	1.5	1.1	1.3
21	0.5	0.7	0.8	0.3	0.3	0.2	1.1	1.3	1.0	1.5	1.2	0.7	0.7	1.2	1.1	1.3	0.9	1.2	1.2	0.7	1.6	1.7	1.6	1.5	1.6	1.7	1.1	2.0	1.6	1.7	1.5	1.1	1.3
22	0.4	0.8	0.5	0.3	0.4	0.1	0.9	1.0	0.9	1.3	1.0	0.6	0.8	1.1	1.0	1.3	1.0	1.1	0.9	0.6	1.4	1.1	1.5	1.3	1.3	1.5	0.7	1.8	1.4	1.7	1.3	1.0	1.1
23	1.1	0.4	0.7	0.3	0.8	0.4	0.2	0.5	0.2	0.1	0.1	0.7	0.2	0.2	0.1	0.0	0.1	0.0	0.0	0.3	0.2	0.4	0.4	0.5	0.4	0.4	0.5	0.2	0.2	0.4	0.0	0.0	
24	0.9	0.7	0.9	0.5	0.6	0.5	0.2	0.4	0.5	0.0	0.4	0.5	0.1	0.2	0.2	0.0	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.4	0.4	0.0	0.1	0.1	0.2	0.2
ave.	0.2	0.2	0.3	0.2	0.1	0.1	0.7	0.7	0.6	0.8	0.8	0.5	0.5	0.6	0.8	0.8	0.7	0.7	0.7	0.3	1.0	0.9	1.0	1.0	1.1	1.1	0.8	1.2	1.1	1.1	1.1	0.7	0.8
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		

STF Net (MW)





STF Net Observations

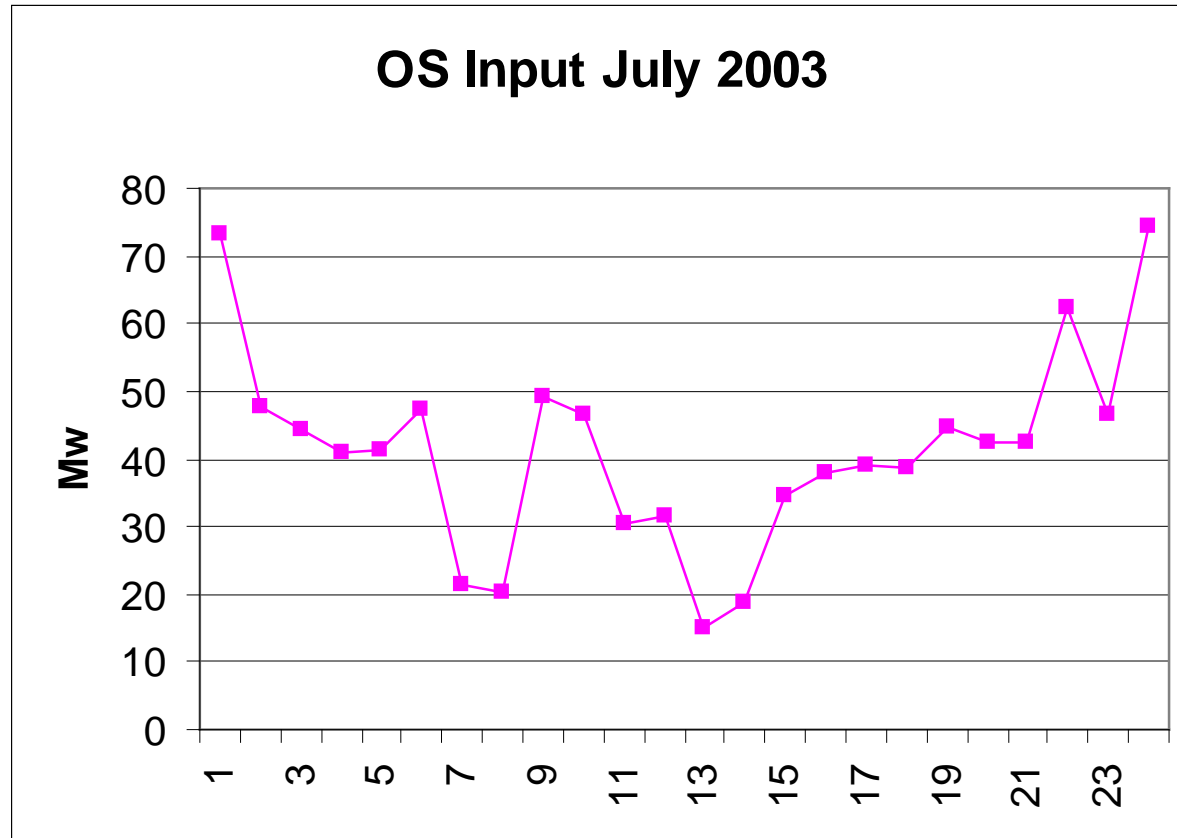
- Net STF is negative during LLH and somewhat shaped during HLH.
- Net STF is significant and follows the shape of the Retail plus LTF requirements. However, it is not of sufficient magnitude to fully make up the difference between Retail plus LTF requirements and Generation.

OS Purchases (Mw)

July 2003 OS Input (MW)

	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16	
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31			
1	210	25	115							75	100	90	205	110	177	13			10	75		15	67	292	134	170	225			125	100	117	73	
2		25	140								68	150	130	75	85					175		29	173	180		70			100	100	107	48		
3			215							20		125	69		121					150		45	255	75		50			100	100	110	44		
4			215									75	5		149					60			280	50		50			100	100	108	41		
5			215										3		163								289	115		50			100	100	129	41		
6			95												20								209	509	150				100	100	169	47		
7																							50	247	142				100		135	22		
8							28		50							15			60				161	50	30		75	100	65		10	59	20	
9	75		100	150		100		100	75	50				100	100				80				165	190	100	100	299	75			116	49		
10	50		100	100	160	100		100			109	40			100	75	80			45	22		55	150	50	70	320				96	46		
11	20		50		100					36	50				100	84			25	100			25	65	50	140	360	20			82	31		
12					140		63	100		15	105			65	100		20						15	60	50	60	140				71	32		
13					75			100			45			50								30	20		50	10	135				57	15		
14								50		20	115			50								17		140		160	30			50	70	19		
15	12							50		20	320			50		40	25					8		165		40	35			140	75	35		
16											295			100											165	100	30	36	110		140	122	38	
17											240			75									50		140	100	35	135	100		140	113	39	
18											240			100					65	50			50		75	150	25	165	110		12	95	39	
19	50				50	50				95				100		45	20	150	50		46		85	10		143	60	180	130		15	75	45	
20					28						96			50						75				80		134	270		20	185	121		106	42
21					23						47	54				25			100				180		151	244		20	100	117		96	42	
22	50			39					130	100	67	60				50			130	125		27	135	104	140	290	45	35		244		104	62	
23	50	30							45							78			25	100	39	112	120	100	109	145	25	45	60	175	30	76	47	
24	75	90							75	100		150			25	75			75	75	112	78	220	255	92	193			40	200		114	74	
ave.	66	43	138	96	82	83	63	75	83	58	133	99	82	75	104	63	40	23	73	86	58	41	128	153	109	127	132	69	100	132	81	87	41	
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th			

OS Purchases (Mw) 6x16





OS Purchases

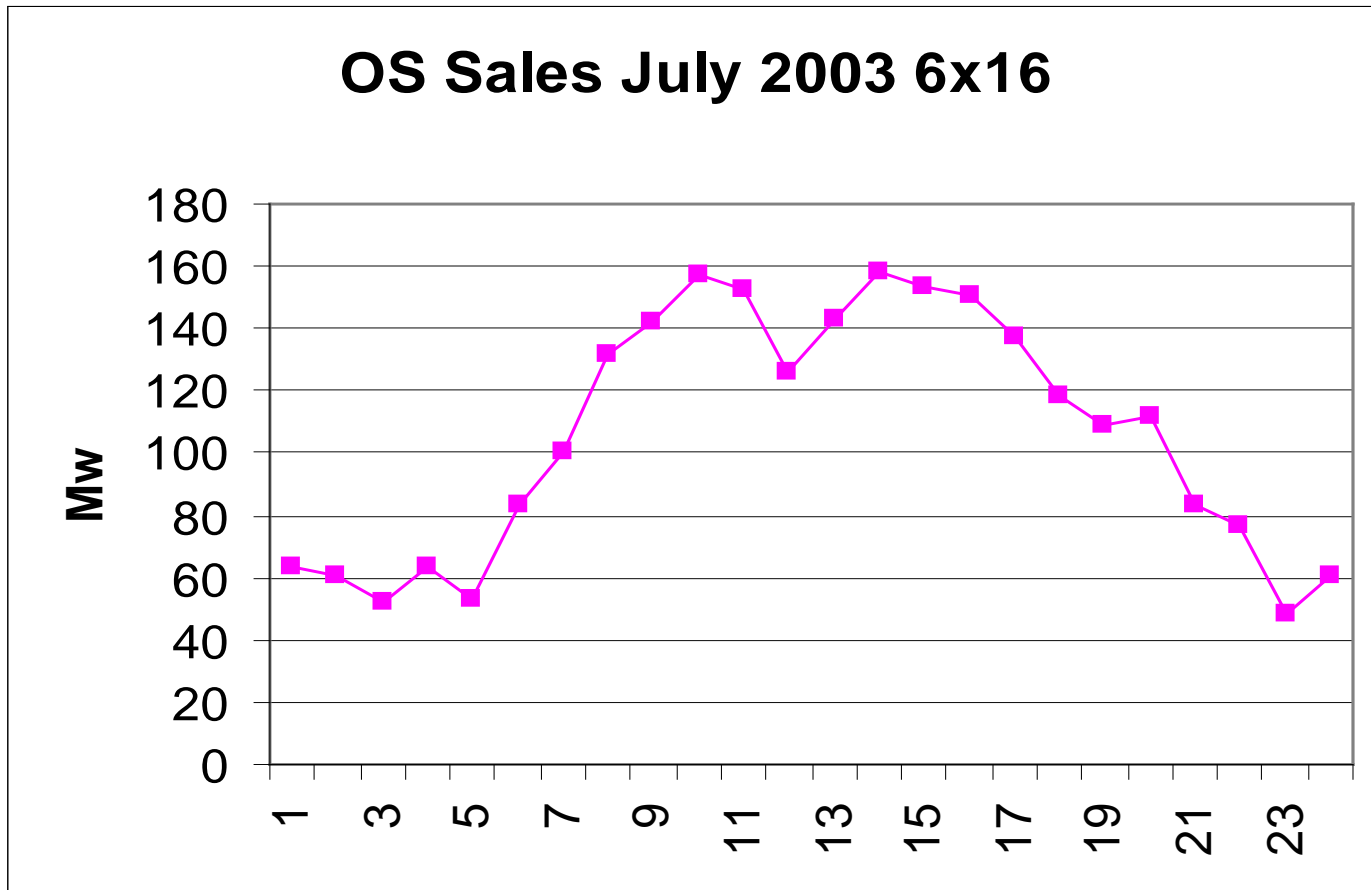
- OS purchases are random as would be expected.
- OS purchases are insignificant when compared to Retail load that is in the 6-8,000 Mw range.

OS Sales (Mw)

(Red values leave the system)

July 2003 OS Output (MW)																														Ave.	6x16		
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	200	30	25	187	338	80	75		75	95	95		230	200	60					100	15	15			38		225				116	63	
2			25	230	290	80	80			50	10		255	250	150		10	50		75	30		110	60	50		200	75			109	61	
3			35	185	155	228	50			125	40		200	200	100		62	75			50	140	60				50	75		75	106	52	
4			30	100	65	313	50			100	90		235	175	200		110	150			50	140	40				75	235		75	124	63	
5			25	130	65	265	75		10	25	40		160	175	100		45	150			125	140					116	165		75	105	53	
6	75		25	165		250	75		40	135	10		85		150	118	242	185	150		100	125	140	150			181	100		75	123	83	
7	125		100	45		295	125	125	155	200			85	175	170	138	125	210	225		154	113					160	125	75		146	100	
8	250	140	100	70	295	175	175	125	315	175	40	175	210	150	135	223	100	90	175	25	250	60			60		75	75	75	30	75	137	132
9	100	120	110	55	75	90	270	105	475	275	35	175	210	275	165	55		75	100		259	80	50		185		75	75	150	170	165	147	142
10	30	195	179	385	25	180	345	139	510	300	10	275	210	180	10	80	430	85	125	35	207	95	50	20	70		75	119	246	107	110	161	158
11	50	215	220	530	210	160	377	74	420	336		245	225	357	15	35	415	85		75	180	70			20		75		241	175	85	196	153
12	140	125	239	455	195	170	332	110	415	210	15	70	218	211	20	40	248	30		200	210	90					75	50	291	120		171	126
13	175	125	289	295	160	319	225	90	446	320	15	65	200	220	20	75	206	114	150	177	264	76			50		75	50	150	252	30	165	143
14	175	80	335	367	125	407	303	95	436	175	15	115	225	305	100	151	213	290	200	270	298						75	110	168	200	65	204	158
15	175	95	379	488	125	373	262	100	471	168	10	146	315	270	135	81	112	275	140	255	218	13					75	140	250	240	30	198	153
16	86	90	345	481	125	289	267	120	446	185	10	190	383	345	105	89	107	280	100	250	126	17	2				104	312	230	95	192	151	
17	120	60	350	507	215	295	256	110	356	100		185	377	350	95	91	87	110	165	335	124	18		10		19		125	353	125		190	137
18	155	50	335	299	282	200	170	40	266	85		240	332	350	85	20		75	40	360	137	59			50	25	124	270	125		167	118	
19	135	125	255	330	180	145	65	30	261	90		155	300	330	75			50	115	285	220	61		10		50	25	104	250	165		152	109
20	35	115	210	295	195	5	121	60	276	65		50	355	280	25	30	50	75	125	160	210	50		100		50	25	269	250	150		134	112
21	10	55	143	145	30	28	25	25	286	40	50	50	395	225	65	15	90		125	120	200	25			50	50	25	170	250	95		103	83
22			142	265	15	35	25	63	196	20	120	350	315	50	43		85		50	120	267				50	50	25	160	75	150		116	76
23			115	175		20		20	75	60		260	225	215	30	118				120	200	30	40						25	20		103	48
24	65	25	205	165	28	67	80	80	100	50	30	350	240	105							120	220	75	100			75				115	61	
ave.	117	103	176	265	152	186	166	84	287	141	37	182	249	234	89	85	179	119	127	182	191	60	82	63	68	45	57	128	196	143	75	138	106
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		

OS Sales (Mw) 6x16





OS Sales Observations

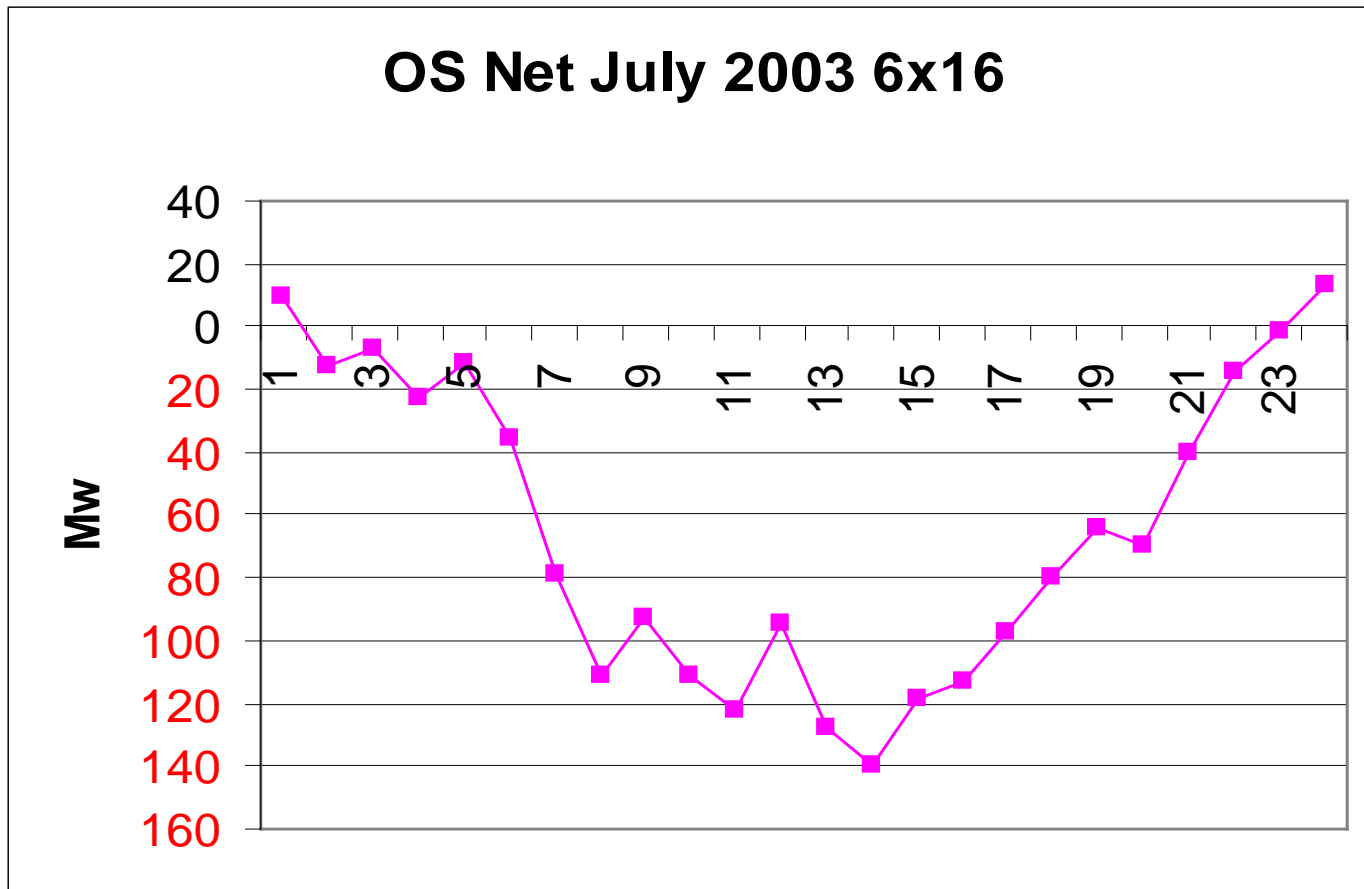
- OS Sales (although larger than OS Purchases) are insignificant when compared to Retail load that is in the 6-8,000 Mw range.
- There is more OS sales during daylight hours than at night.

OS Net (MW x 1,000) 6x16

(Red values leave the system)

July 2003 OS Net (MW)																																Ave.	6x16
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		
	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31		
1	10	5	90	187	338	80	75		75	20	5	90	25	90	117	13			10	75	100		52	292	134	132	225	225		125	100	8	10
2		25	115	230	290	80	80			50	58	150	125	175	65			10	50	175	75	1	173	70	60	20		200	75	100	100	19	13
3			180	185	155	228	50			105	40	125	131	200	21			62	75	150		5	115	15		50		50	75	100	25	19	7
4			185	100	65	313	50			100	90	75	230	175	51			110	150	60		50	140	10		50		75	235	100	25	37	23
5			190	130	65	265	75		10	25	40		157	175	63			45	150			125	149	115		50		116	165	100	25	27	12
6	75		70	165		250	75		40	135	10		85	0	130	118	242	185	150		100	125	69	359	150			181	100	100	25	45	36
7	125		100	45		295	125	125	155	200			85	175	170	138	125	210	225		154	113	50	247	142			160	125	25		77	78
8	250	140	100	70	295	175	175	97	315	125	40	175	210	150	135	223	85	90	175	35	250	60	161	50	30			25	10	30	65	103	111
9	25	120	10	95	75	10	270	5	475	200	15	175	210	275	65	45		75	100	80	259	80	115	190	85	100	224		150	170	165	68	93
10	20	195	79	285	135	80	345	39	510	300	99	235	210	180	90	5	350	85	125	10	185	95	5	130	20	70	245	119	246	107	110	100	111
11	30	215	170	530	110	160	377	74	420	300	50	245	225	357	85	49	415	85	25	25	180	70	25	65	30	140	285	20	241	175	85	118	122
12	140	125	239	455	55	170	269	10	415	195	90	70	218	146	80	40	228	30	0	140	210	90	15	60	50	60	65	50	291	120		106	95
13	175	125	289	295	85	319	225	10	446	320	30	65	200	170	20	75	206	114	150	177	264	46	20			10	60	50	150	252	30	133	127
14	175	80	335	367	125	407	303	45	436	155	100	115	225	255	100	151	213	290	200	270	298	17			140		85	80	168	200	15	151	139
15	163	95	379	488	125	373	262	50	471	148	310	146	315	220	135	81	72	250	140	255	218	5			165		35	105	250	240	110	143	119
16	86	90	345	481	125	289	267	120	446	185	285	190	383	245	105	89	107	280	100	250	126	17	2		165	100	30	68	202	230	45	136	113
17	120	60	350	507	215	295	256	110	356	100	240	185	377	275	95	91	87	110	165	335	124	18	50	10	140	81	35	10	253	125	140	127	98
18	155	50	335	299	282	200	170	40	266	85	240	240	332	250	85	20		75	25	310	137	59	50	50	75	100		41	160	125	12	101	80
19	85	125	255	330	130	95	65	30	261	5		155	300	230	75		45	30	35	235	220	15	85			93	35	76	120	165	15	82	64
20	35	115	210	295	167	5	121	60	276	31		50	355	230	25	30	50	75	50	160	210	50	80	100	134	220	25	249	65	29		83	69
21	10	55	143	145	7	28	25	25	286	7	4	50	395	225	65	10	90		25	120	200	25	180		101	194	25	150	150	22		56	41
22	50		142	226	15	35	25	63	66	80	53	290	315	50	43	50	85		80	5	267	27	135	104	90	240	20	125	75	94		29	14
23	50	30	115	175		20		20	30	60		260	225	215	30	40			25	20	161	82	80	100	109	145	25	45	60	150	10	15	2
24	10	65	205	165	28	67	80	80	25	50	30	200	240	105	25	75			75	45	108	3	120	255	92	193	75		40	200		8	14
ave.	63	61	124	253	109	176	157	41	241	110	51	100	232	190	38	36	96	92	73	71	160	38	78	81	63	85	49	74	134	36	7	74	64
	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		

OS Net July 2003 (net sales)



OS Net Observations



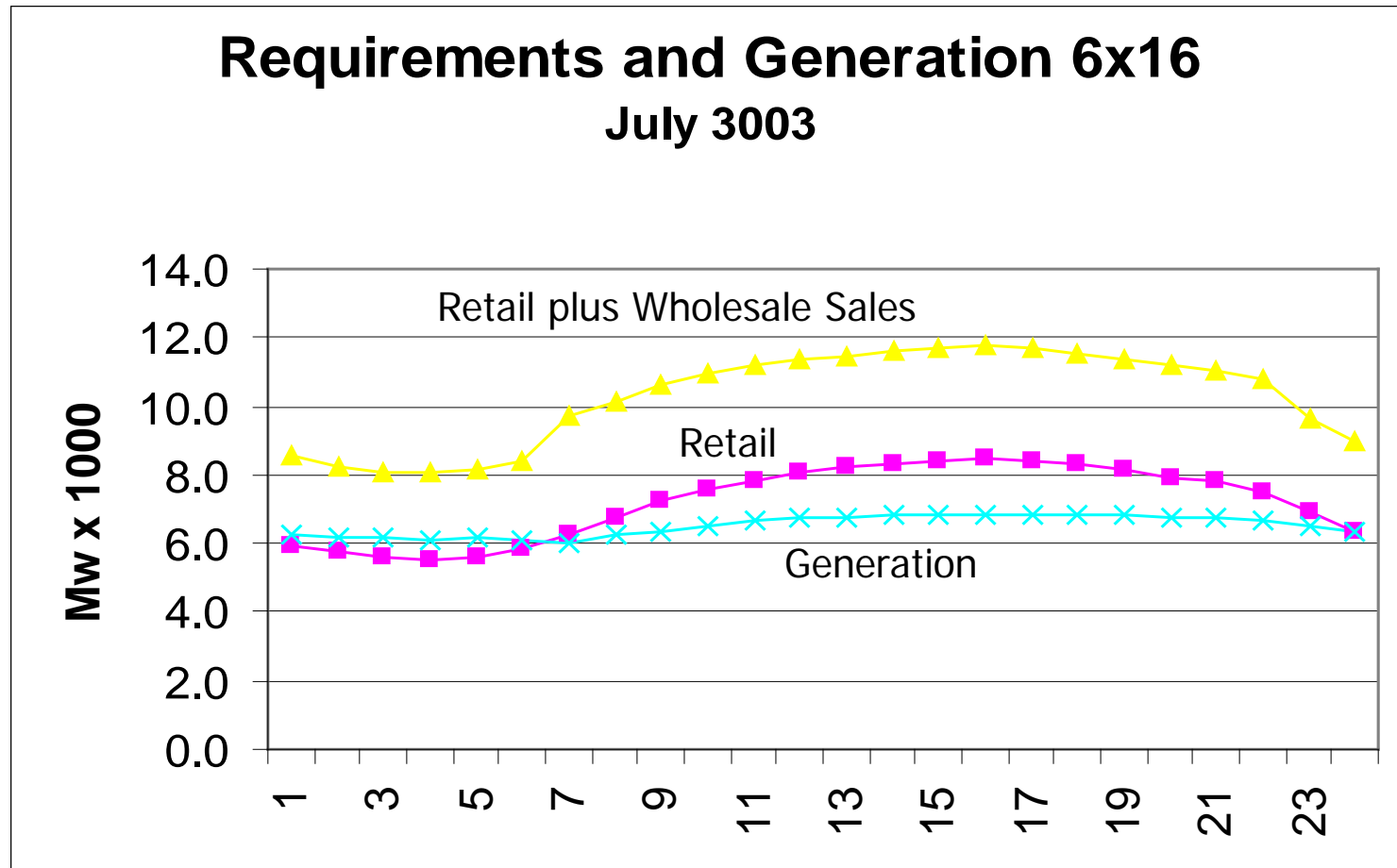
- Net OS activity is insignificant when compared to Retail load that is in the 6-8,000 Mw range.
- The Net OS activity results in increased sales during the peak hours.

Sum of LF, SF, and OS Sales

(Red means leaving the system)
(Mw x 1,000)

		July 2003 Sum LF, SF, OS																																
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	Ave.	6x16
		7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	98	
Temp		96	94	93	92	94	95	96	87	94	103	102	105	99	98	105	102	102	100	100	100	101	104	104	101	94	91	94	95	99	101	97	98	
1		0.9	1.5	1.1	1.3	1.1	0.8	0.6	0.7	1.2	0.6	0.8	1.0	0.8	1.3	1.1	0.3	0.6	0.7	0.9	0.6	0.8	0.8	0.7	0.2	0.5	0.3	0.1	0.6	0.6	0.5	0.6	0.8	0.8
2		1.1	1.4	0.8	1.2	1.0	0.8	0.6	0.7	0.8	0.5	0.7	0.7	0.6	1.3	1.1	0.7	0.5	0.6	0.8	0.5	0.6	0.5	0.2	0.4	0.7	0.3	0.1	0.7	0.5	0.4	0.4	0.7	0.7
3		1.1	1.2	0.9	1.1	1.0	0.9	0.5	0.7	0.9	0.6	0.8	0.6	0.8	1.3	0.9	0.8	0.6	0.4	0.9	0.6	0.6	0.5	0.4	0.5	0.7	0.4	0.1	0.5	0.4	0.4	0.3	0.7	0.7
4		0.9	1.2	0.7	1.0	0.9	0.9	0.6	0.7	0.9	0.6	0.9	0.7	1.1	1.3	0.8	0.7	0.7	0.7	1.1	0.7	0.7	0.6	0.4	0.6	0.7	0.4	0.1	0.5	0.4	0.4	0.3	0.7	0.7
5		0.9	1.2	0.7	1.0	0.9	0.9	0.6	0.7	0.9	0.5	0.8	0.7	1.0	1.3	0.9	0.7	0.6	0.7	1.1	0.7	0.8	0.8	0.2	0.4	0.6	0.3	0.1	0.5	0.4	0.4	0.4	0.7	0.7
6		1.0	1.2	0.8	1.0	0.6	0.8	0.5	0.6	1.0	0.7	0.6	0.6	1.0	1.2	1.0	0.6	1.0	0.9	0.9	1.1	0.7	0.6	0.3	0.0	0.1	0.4	0.1	0.7	0.5	0.4	0.5	0.7	0.7
7		0.5	0.2	0.1	0.4	0.2	0.5	0.3	0.1	0.0	0.0	0.0	0.6	0.3	0.7	0.0	0.4	0.1	0.1	0.1	0.4	0.4	0.0	0.4	0.3	0.1	0.3	0.5	0.3	0.8	0.7	0.8	0.0	0.1
8		0.4	0.3	0.1	0.7	0.6	0.5	0.0	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.5	0.3	0.5	0.2	0.6	0.5	0.2	0.9	0.6	0.4	0.3	0.5	0.5	0.8	0.9	0.7	0.1	0.2
9		0.1	0.3	0.2	0.9	0.5	0.5	0.1	0.4	0.1	0.0	0.1	0.1	0.1	0.3	0.1	0.6	0.1	0.0	0.1	0.6	0.3	0.0	0.4	1.0	0.6	0.6	0.4	0.9	0.5	0.6	0.4	0.1	0.2
10		0.0	0.4	0.1	1.0	0.2	0.8	0.2	0.1	0.2	0.1	0.5	0.1	0.0	0.2	0.5	0.6	0.1	0.2	0.0	0.5	0.5	0.2	0.8	1.0	0.8	1.1	0.3	1.0	0.5	0.6	0.5	0.2	0.3
11		0.0	0.3	0.0	1.2	0.5	0.6	0.1	0.3	0.1	0.2	0.9	0.0	0.0	0.2	0.7	0.6	0.1	0.0	0.2	0.3	0.4	0.3	0.7	0.7	0.6	1.1	0.3	1.1	0.7	0.5	0.5	0.2	0.3
12		0.2	0.0	0.0	1.1	0.6	0.6	0.0	0.5	0.1	0.1	1.2	0.2	0.1	0.1	0.9	0.4	0.4	0.1	0.5	0.5	0.5	0.5	0.9	0.8	0.7	1.1	0.1	1.1	0.5	0.8	1.0	0.3	0.5
13		0.2	0.1	0.1	1.1	0.6	0.6	0.3	0.7	0.4	0.2	1.4	0.5	0.1	0.3	0.6	0.7	0.6	0.5	0.6	0.6	0.6	0.8	1.0	1.1	1.2	1.2	0.4	1.2	0.9	0.9	1.1	0.5	0.6
14		0.3	0.1	0.1	1.2	0.7	0.6	0.3	0.5	0.2	0.3	1.3	0.3	0.1	0.2	0.4	0.3	0.5	0.4	0.6	0.5	0.6	0.9	1.0	1.2	1.3	1.3	0.5	1.2	0.7	1.0	1.2	0.4	0.6
15		0.3	0.1	0.3	1.3	0.7	0.6	0.3	0.4	0.2	0.6	1.4	0.3	0.0	0.2	0.6	0.4	0.6	0.6	0.7	0.4	0.7	0.8	1.0	1.1	1.5	1.3	0.3	1.3	0.7	1.0	1.2	0.4	0.6
16		0.4	0.0	0.3	1.2	0.8	0.6	0.5	0.2	0.0	0.6	1.2	0.2	0.2	0.3	0.3	0.4	0.4	0.6	0.7	0.3	0.9	0.8	1.1	1.1	1.5	1.2	0.5	1.1	0.8	0.9	1.2	0.4	0.6
17		0.4	0.1	0.4	1.2	0.8	0.6	0.4	0.3	0.1	0.6	1.0	0.2	0.2	0.1	0.4	0.4	0.4	0.8	0.7	0.1	0.8	0.9	1.2	1.0	1.4	1.2	0.4	1.1	0.7	0.9	1.2	0.4	0.6
18		0.5	0.2	0.2	1.1	0.8	0.5	0.6	0.4	0.2	0.6	1.0	0.1	0.2	0.1	0.4	0.5	0.5	0.7	0.8	0.1	0.8	0.8	1.1	1.1	1.3	1.4	0.4	1.0	0.9	1.0	1.1	0.4	0.6
19		0.4	0.0	0.1	1.3	0.6	0.4	0.4	0.5	0.1	0.7	0.7	0.2	0.0	0.1	0.4	0.6	0.1	0.8	0.7	0.2	0.6	0.8	1.1	1.0	1.1	1.2	0.4	1.1	1.1	0.8	1.1	0.4	0.6
20		0.4	0.1	0.0	0.8	0.6	0.4	0.2	0.4	0.0	0.6	0.6	0.2	0.3	0.1	0.2	0.5	0.1	0.7	0.7	0.0	0.6	0.9	0.9	0.6	0.8	1.3	0.4	0.9	1.0	1.0	0.7	0.3	0.5
21		0.4	0.1	0.2	0.6	0.4	0.4	0.2	0.3	0.1	0.5	0.3	0.1	0.7	0.1	0.1	0.5	0.0	0.4	0.3	0.3	0.6	0.8	0.9	0.6	0.8	1.1	0.2	0.9	0.6	0.8	0.5	0.2	0.4
22		0.3	0.0	0.4	0.6	0.3	0.4	0.1	0.1	0.0	0.5	0.1	0.3	0.4	0.1	0.1	0.6	0.1	0.3	0.2	0.3	0.3	0.3	0.9	0.6	0.6	1.0	0.0	0.8	0.5	1.0	0.5	0.2	0.3
23		1.5	1.0	1.4	1.0	1.2	0.9	0.7	1.1	0.8	0.7	0.6	1.6	1.0	0.9	0.9	0.8	0.7	0.8	0.6	0.9	0.5	0.4	0.2	0.2	0.1	0.1	0.3	0.2	0.4	0.3	0.3	0.7	0.7
24		1.3	1.0	1.5	1.1	1.0	0.9	0.7	0.9	1.1	0.4	0.8	1.2	0.9	0.6	0.9	0.5	0.8	0.8	0.7	0.8	0.6	0.6	0.4	0.4	0.3	0.3	0.4	0.4	0.6	0.4	0.5	0.7	0.8
Ave.		0.6	0.4	0.4	1.0	0.7	0.6	0.1	0.0	0.3	0.0	0.2	0.2	0.4	0.4	0.1	0.1	0.1	0.0	0.0	0.5	0.2	0.2	0.5	0.5	0.5	0.6	0.2	0.5	0.3	0.4	0.4	0.0	0.0
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th		

Retail, Wholesale Sales and Generation 6x16



Retail, Wholesale, Generation Observations



- Wholesale sales run 40-50% that of Retail.
- A large portion of system resources are required/used to supply non-Retail firm requirements.
- Wholesale sales have a similar pattern to that of Retail with little or no “valley filling”.



Retail, Wholesale, Generation Observations (Cont.)

- Generation is extremely flat when compared with Retail or Wholesale sales.
- Generation is insufficient to serve Retail during HLH and during all hours of the combined Retail, LF, SF, OS sales.
- The System is operated to meet far more than the Retail requirements.

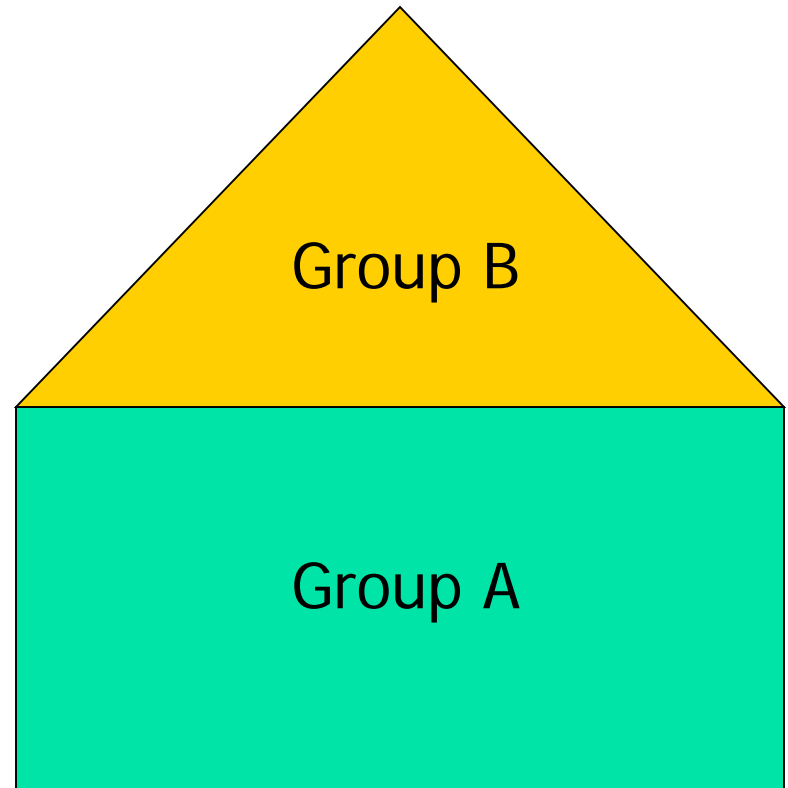


Allocation and Cost Causation

- Allocation factors based upon Retail load may not reflect overall system operations.
- Generation is run fairly flat, so these costs should be heavily spread on the basis of energy.
- Purchase power is used to meet System requirements, not just Retail.

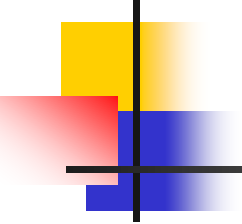
Inadequacy of CP Allocation

- Assume Group A and B have the same demand at peak.
- A CP method would equally allocate fixed costs to each group.
- However, Wholesale revenue would only be generated by Group B as Group A would have no resources to offer for off-system sales.



Normalized Net Wholesale

March 2005 Semi-Annual Report



\$16,738,686	Apr-05
\$21,902,156	May-05
\$1,772,583	Jun-05
-\$9,341,247	Jul-05
\$5,328,503	Aug-05
\$5,550,536	Sep-05
\$13,115,474	Oct-05
\$20,665,108	Nov-05
\$15,040,524	Dec-05
\$23,346,664	Jan-06
\$18,680,249	Feb-06
\$38,843,886	Mar-06



Conclusions Regarding Resource Costs

- PacifiCorp's generation is used flat-out with an energy allocation factor looking like it would be representative of costs.
- Total Retail load is not flat, but it is for some customer groups.
- The difference in Retail load and Generation is addressed in the Wholesale market.
- If a group is allocated the same resources at peak as it uses during the rest of the time (flat load), it has no stake in Wholesale revenues.



Customer Charge

- Yes, some Costs are allocated on the basis of the number of Customers or Weighted Customers.
- However, the Customer Charge is a rate design issue, not a cost allocation issue.
- There are a number of customer groups allocated demand costs, that have a zero demand charge. (Rate design vs. Cost Allocation)



Benefits of a Low Customer Charge

- Conservation: More emphasis is placed upon the energy charge—the charge the customers have control over.
- Customer understanding: Residential customers are not charged for entering a grocery store, why pay one to the utility?
- Low bill for low usage: The proportion of the bill for low usage customers is far more related to the amount of usage.



Benefits of a High Customer Charge

- Utility has a higher fixed income.
- Utility revenue is less dependant upon temperature sensitive load or conservation measures.
- From a rate analyst point of view, revenue collection would be more in line with cost allocation methods.



Price Signals Associated with the Customer Charge

- By itself, it gives a meaningless price signal. Could a customer decide to not take service to avoid it?
- To a rate analyst, it means establishing a closer link between cost allocation and rate design. However, a customer is not a rate analyst.
- It is a charge that simply puts a utility in a bad light with its customers.