Market Flow Threshold Field Test

Joint Stakeholder Meeting

June 6, 2008

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Introduction - Review

Reason For Change In Threshold

- Market flows are assigned an amount of relief by the IDC based on level of TLR, amount of curtailment requested and the priority/sub-priority of tags relative to the market flows.
- On some flowgates, Midwest ISO and PJM are unable to consistently accomplish their relief where they have very small impacts.
- On some flowgates, the markets will either have no generation they can move or will require a large amount of redispatch for a small amount of relief.

Market Flow Threshold Field Test - Review

- **Original Conditions placed on field test:**
  - **12 month test to be completed by December 31, 2008**
  - **Can start before June 1, 2007 or after September 1, 2007**
  - **Must start no later than December 31, 2007**
  - **At least one market must be ready to start**
  - **NERC TLR Standard Drafting Team will monitor progress and make periodic reports to the NERC Standards Committee**
- **<u>New</u> Conditions placed on the field test per the NERC Standards Committee**
  - **Field test extended to October 31, 2008**
  - **Threshold raised to 5% beginning June 1, 2008 (Final recommendation to be based on the results of the field test—5% is not presumed)**

Summary Results - Previous Report

- IDC threshold reports analyzed for July 2007 through December 2007.
- The table below shows the number of TLRs where an entity was unable to provide the IDC requested market flow relief (one or more 5-min interval failures).

	MISO	PJM	SPP	Total TLR 3+ Reports
July & Aug	31	7	1	74
Sept & Oct	20	17	9	82
Nov & Dec	5	21	1	64
Total	56	45	11	220

Activities Through End of April 2008

- Queried the data to see if any trends exist
  - Time Delay (t=0, t=15, t=30)
  - Time of Day (Ramp Up, Ramp Down, On Peak, Off Peak)
  - Flowgate Type (External, Internal)
  - Magnitude of Relief Request in MW (0-10, 10-20, 20-50, 50-100, >100)
- Request to NERC Standards Committee
  - Use 5% as the threshold as of June 1, 2008
  - Extend the field test to October 31, 2008

Headlines

CAUTION: Data analyzed to date are providing some results that do not make sense (This is a work in progress!)

- **Overall performance: ~30% (based on a very restrictive definition of success)**
- **Factors which influence success**
  - **Magnitude of relief request**
  - **Time delay from the onset of the TLR**
- **Factors which are inconclusive**
  - **Threshold percent**
  - **Time of day**

Headlines (cont.)

- Internal flowgates
  - Does not appear to be worthwhile to analyze these events
  - Other processes are at work to handle these events (e.g., Market to Market Redispatch (M2M))
  - IDC CO-226 in place to provide data on M2M

Review of the Data

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Total TLR Events (External) 6/1/2007 thru 4/28/2008 (t=0)

	MISO	PJM	SPP	Total
Events at 0%	14/86 (16%)	1/11 (9%)	143/420 (34%)	158/517 (31%)
Events at 3%	2/22 (9%)	44/234 (19%)	38/131 (29%)	84/387 (22%)
Events at 5%	0	0	0	0

Cell format: # of successes / total events

(% successful)

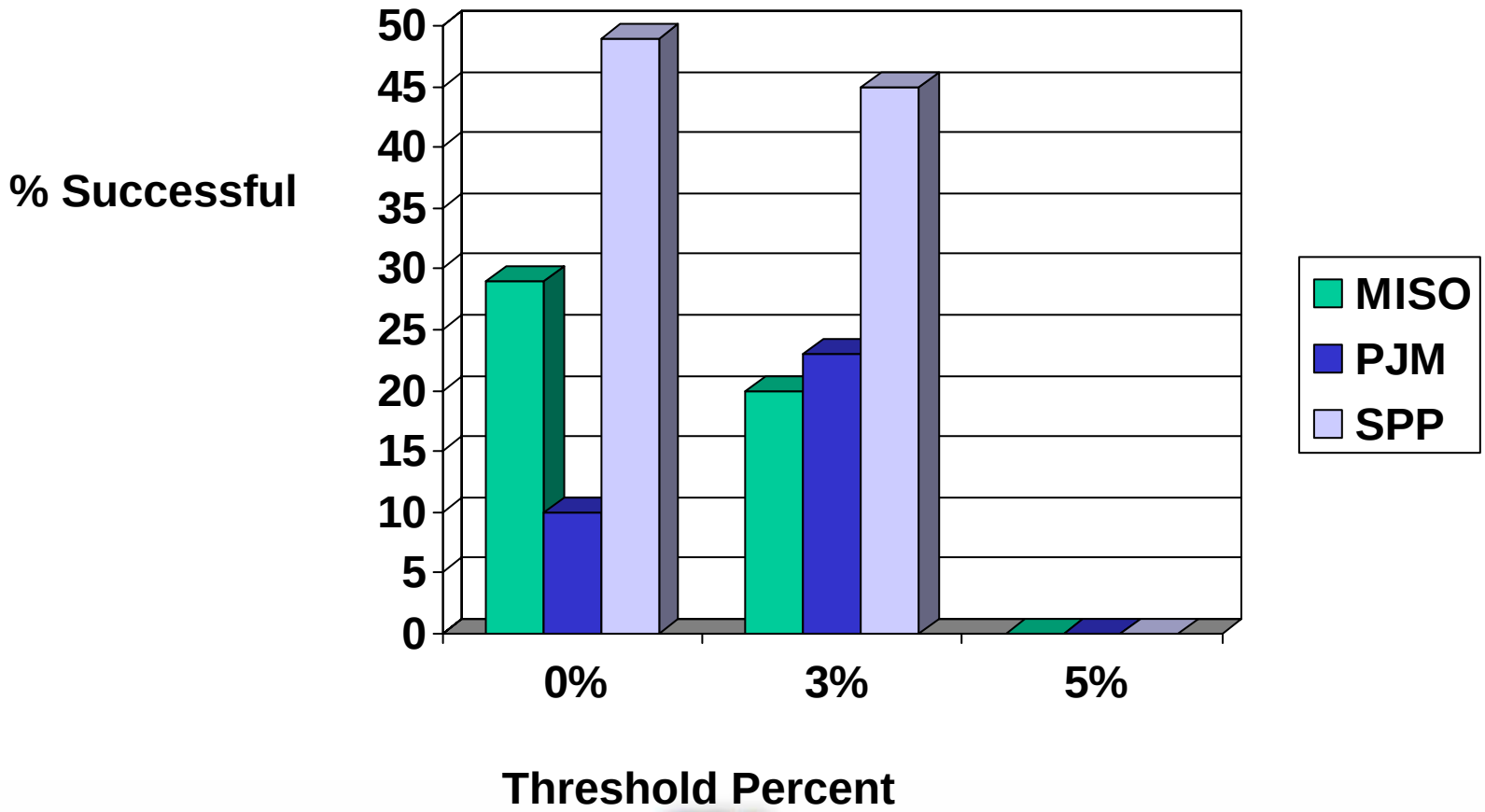
Total TLR Events (External) 6/1/2007 thru 4/28/2008 (t=30)

	MISO	PJM	SPP	Total
Events at 0%	24/83 (29%)	1/10 (10%)	198/401 (49%)	223/494 (45%)
Events at 3%	4/20 (20%)	53/229 (23%)	54/120 (45%)	111/369 (30%)
Events at 5%	0	0	0	0

Cell format: # of successes / total events

(% successful)

Threshold Percent (External) at t=30



Impact of Time of Day (External) 6/1/2007 thru 4/28/2008 (t=0)

	MISO	PJM	SPP	Total
Ramp Down (2000-0100)	1/22 (5%)	4/37 (11%)	47/145 (32%)	52/204 (25%)
Off Peak (0100-0600)	1/19 (5%)	21/93 (23%)	24/76 (32%)	46/187 (25%)
Ramp Up (0600-1000)	8/22 (36%)	1/33 (3%)	12/39 (31%)	21/94 (22%)
On Peak (1000-2000)	6/45 (13%)	19/81 (23%)	98/262 (37%)	123/388 (32%)

Cell format: # of successes / total events

(% successful)

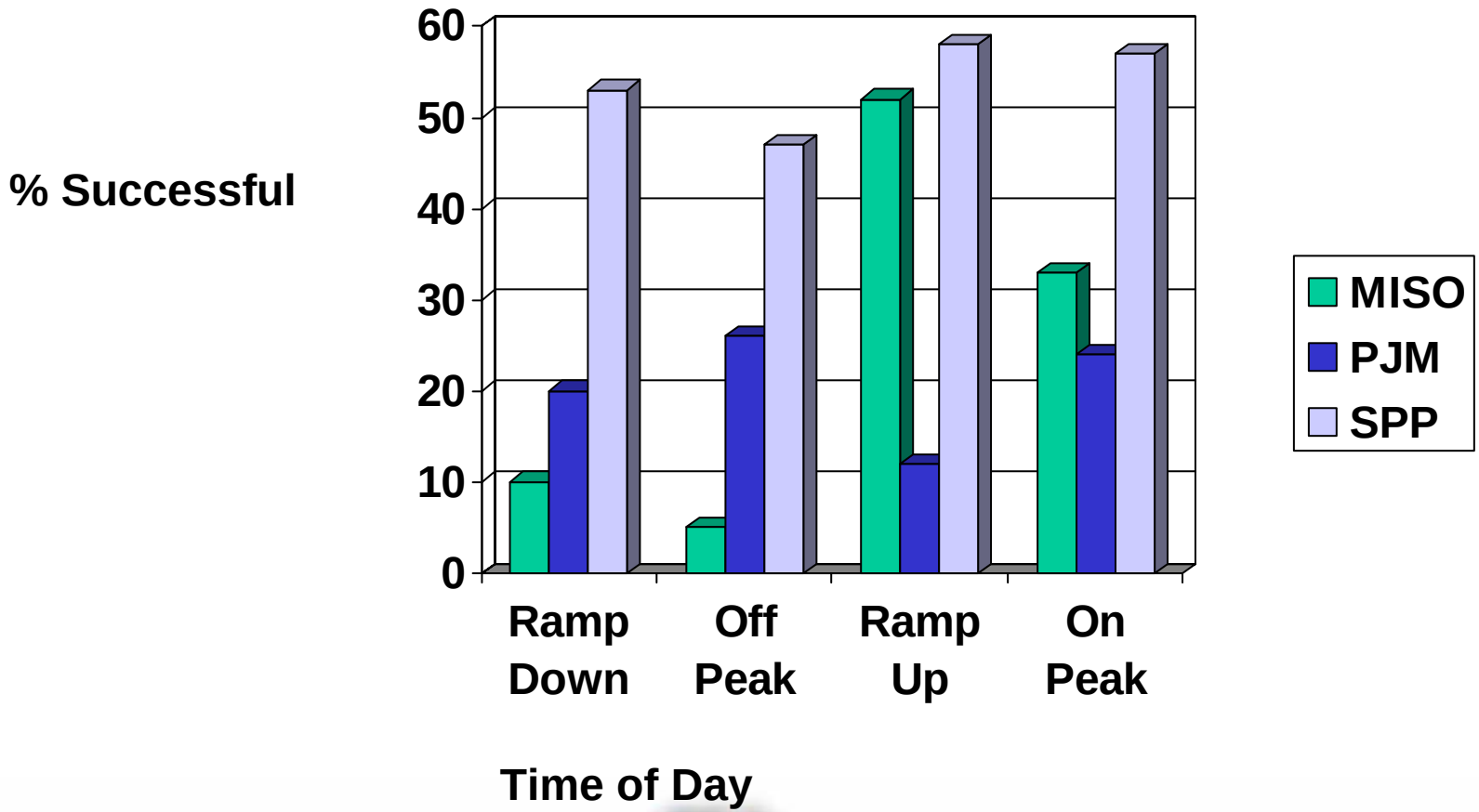
Impact of Time of Day (External) 6/1/2007 thru 4/28/2008 (t=30)

	MISO	PJM	SPP	Total
Ramp Down (2000-0100)	2/21 (10%)	7/35 (20%)	71/133 (53%)	80/189 (42%)
Off Peak (0100-0600)	1/19 (5%)	24/93 (26%)	34/72 (47%)	59/174 (33%)
Ramp Up (0600-1000)	11/21 (52%)	4/33 (12%)	21/36 (58%)	36/89 (40%)
On Peak (1000-2000)	14/42 (33%)	19/78 (24%)	26/46 (57%)	59/166 (36%)

Cell format: # of successes / total events

(% successful)

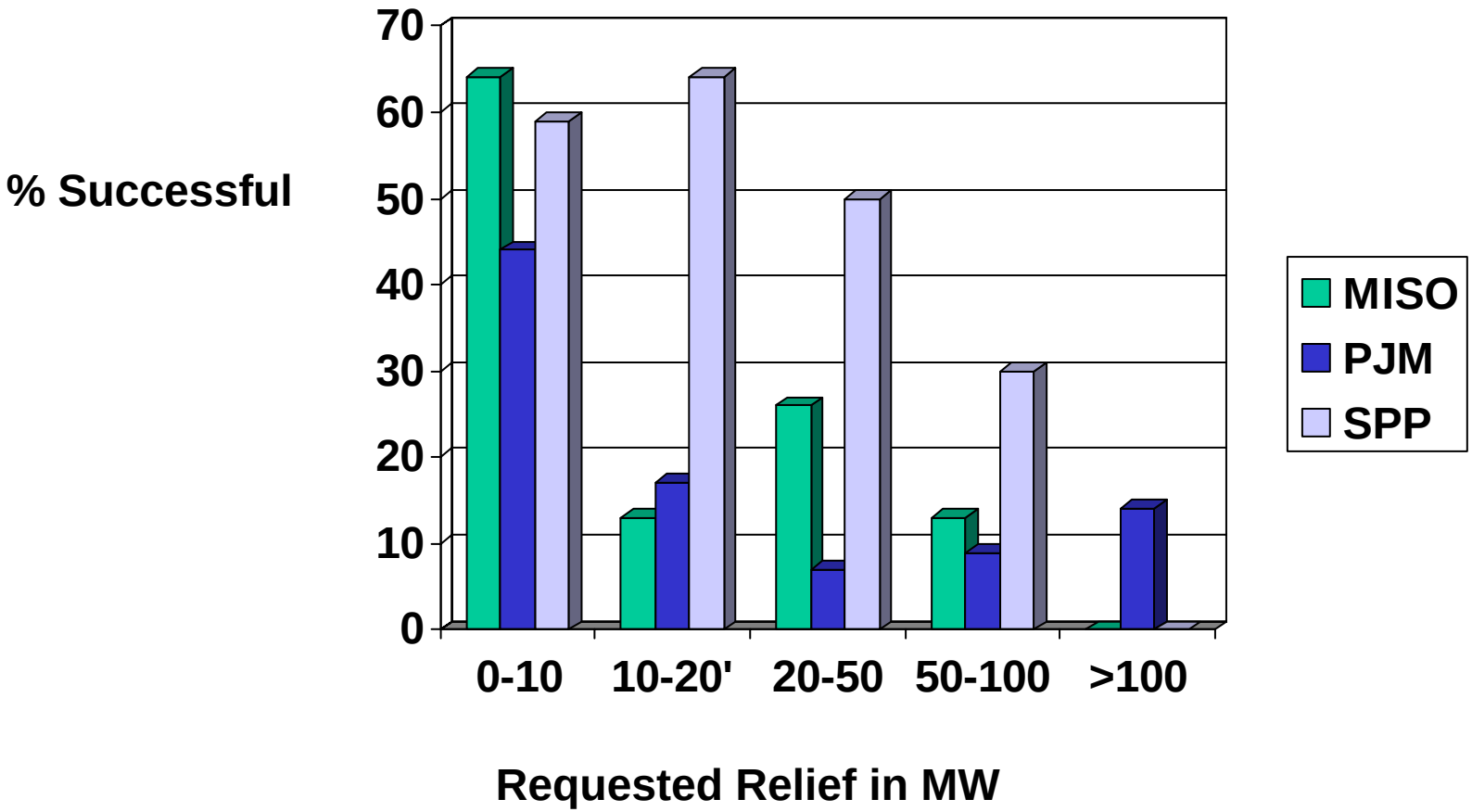
Time of Day (External) at t=30



Impact of Relief Magnitude (External) 6/1/2007 thru 4/28/2008 (t=30)

	MISO	PJM	SPP	Total
0 to 10	16/25 (64%)	38/86 (44%)	83/140 (59%)	137/251 (55%)
10 to 20	2/15 (13%)	6/35 (17%)	50/78 (64%)	58/128 (45%)
20 to 50	6/23 (26%)	6/80 (7%)	85/169 (50%)	97/272 (36%)
50 to 100	4/31 (13%)	1/11 (9%)	34/114 (30%)	39/156 (25%)
>100	0/9 (0%)	3/21 (14%)	0/20 (0%)	3/50 (6%)

Relief Magnitude at t=30



Next Steps

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Next Steps

- **Analyze more data – More Midwest ISO events at 3%; Events at 5%.**
- **Specific flowgate analysis** (successes/total events)
  - **Midwest ISO: 2375 Wylie Ridge (0/19)**
    9159 ONT-ITC (11/53)
  - **PJM: 3006 Eau Claire-Arpin (35/169)**
    7102 QFW (2/35)
  - **SPP: 3167 St. Francois-Lutesville (20/102)**
    6007 Gentlemen3-RedWillow (119/253)
    14484 WhiteBluff-KEO (27/98)
- **Review criteria for "success" – when is close enough?**
- **Investigate other contributing factors**
  - **Marginal zones**
  - **Unconstrained market flow calculation**