

PROBE for Economic Planning

NYISO ESPWG
September 15, 2004

9/12/04

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Economic Planning Thoughts Using PROBE

Potential Objectives

- Evaluate the Cost Effectiveness of Transmission Upgrades to Reduce Congestion Impact
- Provide Information to Inform a Market Response
- Provide Basis for Cost Allocation if Market Does Not Respond
- Provide a Transparent Procedure that is Acceptable to FERC and the PSC



Economic Planning Thoughts Using PROBE

Approach

- Measured by the Change in Bid Production Cost with the Upgrade (Economic Efficiency Improvement) Compared to Base Condition
- Use Adjusted 2004 as the Data Base
- 10 Year Planning Horizon – Base, 5, 10 Years
- Test Ideas to Relieve “Chronic” Congestion
 - All Monitored Elements with Unhedged Congestion Payments > x% of Quarterly Total
- Calculate Statewide Net Production Cost Benefit (Present Worth)



Economic Planning Thoughts Using PROBE

PROBE Processing Questions

- Analyze All Hours or a Sample?
 - Congestion Does Not Correlate Well with Load Level
- Defining the Base Scenario Changes
- Take Out “Unusual Events” in the Base Calculation?
- Solution to Each Problem or Multiple Problems ?
- What about the “Just Submerged” Constraints ?
- Mitigated or Unmitigated Production Cost ?
- Include Cost of Outage in Net Benefit ?



Economic Planning Thoughts Using PROBE

“Chronic Congestion”

- All Monitored Elements that contributed to the top X% of unhedged congestion payments in the previous quarter

2003 Monitored Elements Contributing to Congestion Payments

	99% of Total Congestion Payments	95% of Total Congestion Payments	80% of Total Congestion Payments
1	DUNWODIE 345 SHORE_RD 345 1	DUNWODIE 345 SHORE_RD 345 1	DUNWODIE 345 SHORE_RD 345 1
2	CENTRAL EAST - VC	CENTRAL EAST - VC	CENTRAL EAST - VC
3	LEEDS__ 345 N.SCTLND 345 1	LEEDS__ 345 N.SCTLND 345 1	LEEDS__ 345 N.SCTLND 345 1
4	RAINEY__ 345 DUNWODIE 345	RAINEY__ 345 DUNWODIE 345	RAINEY__ 345 DUNWODIE 345
5	RAINEY__ 138 VERNON__ 138 1	RAINEY__ 138 VERNON__ 138 1	
6	UPNY CONED	UPNY CONED	
7	VALLYSTR 138 EGRDNCTY 138 1	VALLYSTR 138 EGRDNCTY 138 1	
8	E179THST 138 HELLGT_E 138 1		
9	PLSNTVLY 345 LEEDS__ 345 1		
10	W49TH_ST 345 SPRNBRK__ 345		
11	FRESHKLS 138 WILLWBRK 138 1		
12	JAMAICA__ 138 VALLYSTR 138 1		
13	SPRNBRK__ 345 EGRDNCTY 345		



Economic Planning Example Using PROBE

May 2004

- Dunwoodie – Shore Rd. 345 kV was 21% of Unhedged Congestion Payments
- Test
 - 10% Increase in Dunwoodie – Shore Road Rating
 - No Calculation of Outage Cost, Load Growth, Etc.

Bid Production Cost Savings

May 2004

	Unmitigated	Mitigated	Mitigation Difference	%
Total Congestion Impact All Congestion Removed	\$4,121,161	\$3,905,636	-\$215,525	-5%

Monthly Change in Bid Production Cost For

Dunwoodie - Shore Rd. 345 kV Rating Increased 10%
% Change

-\$173,849	\$656,537
-4%	17%



Observations

- Base Case Adjustments Are Critical
- Info on Feasibility, Cost, Schedule Needed to Analyze Options
- Using Unmitigated Bids Gives
 - More Conservative Impact Calculations (BPC Tested Only)
 - More Consistent Benefit Calculation
 - More Consistent Calculation Results

