

# Congestion Impact Calculation Update

NYISO ESPWG  
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12/16/03

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# Topics

- PROBE Status
  - SCUC – PROBE Comparison
  - Incremental Unit Commitment
- Calculation Results
  - Calculation Assumptions
  - July 15 and Sept 22, 2003
- Work Plan



# SCUC – PROBE Results Comparison

(No Network Normalization, Straight SCUC – PROBE Comparison  
... different Scenario than following slides)

## SCUC vs PROBE Differences

15-Jul-03

### Revenue

Market	
Segment	% Difference
Gens	-1.1%
PCL	-1.7%
Imp	-0.6%
Exp	-0.5%
VLd	0.3%
VGn	2.0%
Whl	-5.7%

### Bid Production Cost

Market	
Segment	% Difference
Gens	-1.5%
Imp	1.8%

### Constraint Congestion Payment (If SCUC Amount is > 1% of Total Congestion Payment)

Monitored Element	Contingency	SCUC	PROBE	Difference	% Diff.
HUDS_AVE 138 JAMAICA_ 138 2	Base Case	\$216,671	\$117,690	-\$98,981	46%
DUNWODIE 345 SHORE RD 345 1	SPRNBK 345 EGRDNCTY345CY49	\$836,590	\$745,970	-\$90,620	11%
E179THST 138 HELLGT E 138 1	Base Case	\$927,909	\$762,146	-\$165,763	18%
LEEDS 345 N.SCTLND 345 1	MTN:SCB1 R391OR R94301 O/S LE	\$3,588,590	\$3,476,450	-\$112,140	3%
### Energy+Losses		\$25,493,598	\$25,713,802	\$220,204	-1%
RAINEY 138 VERNON 138 1	TWR: 22 21 A2253	\$66,681	\$69,295	\$2,614	-4%

22-Sep-03

### Revenue

Market	
Segment	% Difference
Gens	0.5%
PCL	2.8%
Imp	-10.4%
Exp	1.7%
VLd	3.0%
VGn	1.2%
Whl	N/A

### Bid Production Cost

Market	
Segment	% Difference
Gens	0.7%
Imp	4.4%

### Constraint Congestion Payment (If SCUC Amount is > 1% of Total Congestion Payment)

Monitored Element	Contingency	SCUC	PROBE	Difference	% Diff.
NRTHPORT 138 PILGRIM 138 1	BUS: ELWOOD 674 681 BK3	-\$104,517	Not ID'ed		
### Energy+Losses		\$19,779,920	\$19,714,626	-\$65,294	0.3%
W49TH_ST 345 SPRNBK_ 345 1	MTN:SCB RNS3 OR RNS5 O/S SPBK	\$3,527,532	\$3,544,930	\$17,398	-0.5%

**Conclusion:** Getting Closer. Some Tune Up Needed for Specific Modeling Assumptions (Ratings, PAR Settings, GT's)



# Congestion Impact Calculation Assumptions

- Process
  1. Put Network to Normal State (No Maintenance Outages)
  2. Run Scenario with PROBE
  3. Release All Transmission Constraints. Run PROBE
  4. “Impact” = (Constrained – No Constraints) Values



# Congestion Impact Calculation Results

- Revises Unit Commitment from Base to Study Scenario
  - Enforces All Generator and Transmission Limits (Ramp Rates, Start-up, Shutdown Costs, Ratings, Etc.)
  - Single Pass versus SCUC Multi-Path
    - Only Bid Load, No Consideration of Load Forecast
  - < 2 Minute Calculation Time
- Initial Tests Completed. Consistent Results Achieved
- Review/Testing with NYISO - MMP, Benchmarking Next
- Sample Results
  - No Constraint Scenario UC Changes by PROBE

15-Jul-03

Unit Capacity Changed When Transmission Constraints Removed

Incremental UC Action for All  
Constraints Removed Scenario

Started Earlier
Started Earlier, Ran Longer
Started
Ran Less
Not Started

West	GENESE	Central	MHKVL	CAPITL	N.Y.C.	LONGIL
		>400 MW				
				<100MW		
<100 MW	<100 MW	<100 MW	>100 MW			
			<100 MW			
					>400 MW	>400 MW

22-Sep-03

West	Central	MHKVL	N.Y.C.
	>400 MW	<100 MW	
<100 MW			
			>100 MW



# Congestion Impact Calculation Assumptions

## Assumptions

- Calculation
  - Virtual Load and Generation Fixed
  - PAR's Fixed at SCUC Supplied Setting
  - Mitigated Bids Used for All Calculations
  - Network Limits Assumed to be Unchanged From SCUC Provided
  - PROBE Incremental Unit Commitment Applied for Scenarios
  - "Load" = (Fixed Load + Price Sensitive Load + Virtual Generation – Virtual Load)
  - "Generation" = (Generators + Imports)
  - Generator Weighted Zonal Calculations
  - Bid Production Cost is for Generation & Imports Only
    - Load May Change From Constrained to Unconstrained Scenarios
- TCC's
  - Within New York TCC's Only
  - All TCC's Credits are Assigned to Load
  - No Zonal TCC Association



# Congestion Impact Calculation Results Top Level 2 Days Comparison

15-Jul-03

Bid Production Cost		Load Payments		Congestion Payments		Generation Payments	
Zone	Impact	Zone	Impact	Zone	Impact	Zone	Impact
<b>NY Total</b>	<b>\$237,151</b>	<b>Total</b>	<b>\$1,765,121</b>	<b>Total</b>	<b>\$2,118,700</b>	<b>NY Total</b>	<b>\$832,182</b>
<b>Imports Total</b>	<b>-\$127,725</b>	<b>TCC Credit Lost Due to No Constraints</b>	<b>\$1,311,975</b>	<b>TCC Hedge</b>	<b>\$1,311,975</b>	<b>Imports Total</b>	<b>-\$363,641</b>
<b>Total</b>	<b>\$109,426</b>	<b>Net Load Payments Due to Congestion</b>	<b>\$453,146</b>	<b>TCC Unhedged Congestion Payments</b>	<b>\$730,478</b>	<b>Total</b>	<b>\$468,541</b>

22-Sep-03

Bid Production Cost		Load Payments		Congestion Payments		Generation Payments	
Zone	Impact	Zone	Impact	Zone	Impact	Zone	Impact
<b>NY Total</b>	<b>\$256,724</b>	<b>Total</b>	<b>\$634,431</b>	<b>Total</b>	<b>\$909,963</b>	<b>NY Total</b>	<b>\$261,792</b>
<b>Imports Total</b>	<b>-\$226,730</b>	<b>TCC Credit Lost Due to No Constraints</b>	<b>\$828,740</b>	<b>TCC Hedge</b>	<b>\$828,740</b>	<b>Imports Total</b>	<b>-\$414,032</b>
<b>Total</b>	<b>\$29,994</b>	<b>Net Load Payments Due to Congestion</b>	<b>-\$194,309</b>	<b>TCC Unhedged Congestion Payments</b>	<b>\$81,224</b>	<b>Total</b>	<b>-\$152,240</b>



# Congestion Impact Calculation Results By Zone 7/15/03

15-Jul-03

Bid Production Cost	
Zone	Impact
CAPITL	-\$20,028
CENTRL	-\$91,038
DUNWOD	\$0
GENESE	-\$32,191
HUDVL	-\$30,440
LONGIL	\$247,481
MHKVL	-\$89,401
MILLWD	\$0
N.Y.C.	\$317,280
NORTH	\$210
WEST	-\$64,723
<b>NY Total</b>	<b>\$237,151</b>
HQ	-\$4,342
NPX	-\$13,923
OH	-\$35,582
PJM	-\$73,879
<b>Imports Total</b>	<b>-\$127,725</b>
<b>Total</b>	<b>\$109,426</b>

Load Payments	
Zone	Impact
CAPITL	-\$25,271
CENTRL	-\$23,346
DUNWOD	-\$12,315
GENESE	-\$26,137
HUDVL	-\$10,876
LONGIL	\$837,293
MHKVL	-\$8,316
MILLWD	-\$6,809
N.Y.C.	\$1,095,528
NORTH	-\$6,689
WEST	-\$47,941
<b>Total</b>	<b>\$1,765,121</b>
<b>TCC Credit Lost Due to No Constraints</b>	<b>\$1,311,975</b>
<b>Net Load Payments Due to Congestion</b>	<b>\$453,146</b>

Congestion Payments	
Zone	Impact
CAPITL	\$0
CENTRL	-\$417
DUNWOD	\$184
GENESE	-\$963
HUDVL	-\$47
LONGIL	\$895,187
MHKVL	-\$51
MILLWD	\$33
N.Y.C.	\$1,242,130
NORTH	\$0
WEST	-\$17,356
<b>Total</b>	<b>\$2,118,700</b>
<b>TCC Hedge</b>	<b>\$1,311,975</b>
<b>TCC Unhedged Congestion Payments</b>	<b>\$730,478</b>

Generation Payments	
Zone	Impact
CAPITL	-\$32,648
CENTRL	-\$146,910
DUNWOD	-\$12
GENESE	-\$44,689
HUDVL	-\$54,321
LONGIL	\$745,589
MHKVL	-\$100,799
MILLWD	-\$23,543
N.Y.C.	\$645,176
NORTH	-\$11,737
WEST	-\$143,925
<b>NY Total</b>	<b>\$832,182</b>
HQ	-\$28,684
NPX	-\$37,306
OH	-\$136,865
PJM	-\$160,786
<b>Imports Total</b>	<b>-\$363,641</b>
<b>Total</b>	<b>\$468,541</b>





# Congestion Impact Calculation Results By Constraint

## 7/15/03

15-Jul-03

Monitored Facility	Contingency	CAPITL	CENTRL	DUNWOD	GENESE	HUDVL	LONGIL	MHKVL	MILLWD	N.Y.C.	NORTH	WEST	Total
### Energy+Losses		-\$25,271	-\$22,929	-\$12,499	-\$25,174	-\$10,829	-\$57,894	-\$8,265	-\$6,842	-\$146,602	-\$6,689	-\$30,585	-\$353,579
DUNWODIE 345 SHORE_RD 345 1	Base Case	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	SPRNBRK 345 EGRDNCTY345CY49	\$0	\$0	\$0	\$0	\$0	\$1,029,692	\$0	\$0	\$0	\$0	\$0	\$1,029,692
E179THST 138 HELTGT_E 138 1	Base Case	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$949,183	\$0	\$0	\$949,183
ELWOOD_W 138 GREENLWN 138 1	NRTHPORT138WELWOOD_E138_681	\$0	\$0	\$0	\$0	\$0	-\$35,452	\$0	\$0	\$0	\$0	\$0	-\$35,452
HUDS_AVE 138 JAMAICA_ 138 2	Base Case	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$121,994	\$0	\$0	\$121,994
NIAGARA_ 345 ROCHESTR 345 1	KINTIGH_ 345 ROCHESTR345_SR-1	\$0	-\$417	-\$135	-\$963	-\$47	-\$596	-\$51	-\$64	-\$1,376	\$0	-\$17,356	-\$21,005
NRTHPORT 138 PILGRIM_ 138 1	NRTHPORT138EPILGRIM_138A677	\$0	\$0	\$0	\$0	\$0	-\$140,990	\$0	\$0	\$0	\$0	\$0	-\$140,990
RAINEY__ 138 VERNON__ 138 1	TWR: 22 21 A2253	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$76,247	\$0	\$0	\$76,247
RAINEY__ 345 DUNWODIE 345 2	DUNWODIE345_RAINEY__ 345_72	\$0	\$0	\$319	\$0	\$0	-\$2,483	\$0	\$97	\$96,082	\$0	\$0	\$94,015
VALLYSTR 138 EGRDNCTY 138 1	BUS: E F BARRET 292 459 BA	\$0	\$0	\$0	\$0	\$0	\$5,227	\$0	\$0	\$0	\$0	\$0	\$5,227
<b>Total Load Payment Impact</b>		<b>-\$25,271</b>	<b>-\$23,346</b>	<b>-\$12,315</b>	<b>-\$26,137</b>	<b>-\$10,876</b>	<b>\$837,293</b>	<b>-\$8,316</b>	<b>-\$6,809</b>	<b>\$1,095,528</b>	<b>-\$6,689</b>	<b>-\$47,941</b>	<b>\$1,765,121</b>
<b>Total Congestion Payment Impact</b>		<b>\$0</b>	<b>-\$417</b>	<b>\$184</b>	<b>-\$963</b>	<b>-\$47</b>	<b>\$895,187</b>	<b>-\$51</b>	<b>\$33</b>	<b>\$1,242,130</b>	<b>\$0</b>	<b>-\$17,356</b>	<b>\$2,118,700</b>

Monitored Facility  
 ### Energy+Losses  
 === DNI import  
 DUNWODIE 345 SHORE\_RD 345 1  
 E179THST 138 HELTGT\_E 138 1  
 ELWOOD\_W 138 GREENLWN 138 1  
 HUDS\_AVE 138 JAMAICA\_ 138 2  
 NIAGARA\_ 345 ROCHESTR 345 1  
 NRTHPORT 138 PILGRIM\_ 138 1  
 OH - NY  
 PJ - NY  
 RAINEY\_\_ 138 VERNON\_\_ 138 1

Contingency  
 Base Case  
 0 SPRNBRK\_345\_EGRDNCTY345CY49\_\_\_  
 Base Case  
 NRTHPORT138WELWOOD\_E138\_681\_\_\_  
 Base Case  
 KINTIGH\_345\_ROCHESTR345\_SR-1\_\_\_  
 NRTHPORT138EPILGRIM\_138A677\_\_\_  
 Base Case  
 Base Case  
 TWR: 22 21 A2253  
 Grand Total

Load Payment Impact	TCC Credit Lost	Net Load Payments
-\$353,579	\$0	-\$353,579
-\$353,579	\$0	-\$353,579
\$39,789	\$15,145	\$24,644
\$1,029,692	\$323,614	\$706,079
\$949,183	\$712,158	\$237,025
-\$35,452	-\$9,308	-\$26,144
\$121,994	\$138,993	-\$16,999
-\$21,005	\$21,713	-\$42,718
\$76,247	\$65,989	\$10,258
\$94,015	\$72,007	\$22,008
\$5,227	\$1,857	\$3,370
<b>\$1,765,121</b>	<b>\$1,311,975</b>	<b>\$453,146</b>

Congestion Payment Impact	TCC Hedged	Total Unhedged Congestion Payment
\$39,789	\$15,145	\$24,644
\$1,029,692	\$323,614	\$706,079
\$949,183	\$712,158	\$237,025
-\$35,452	-\$9,308	-\$26,144
\$121,994	\$138,993	-\$16,999
-\$21,005	\$21,713	-\$42,718
-\$140,990	-\$30,192	-\$110,798
\$94,015	\$72,007	\$22,008
\$5,227	\$1,857	\$3,370
<b>\$2,118,700</b>	<b>\$1,311,975</b>	<b>\$806,725</b>

Generation & Import Revenue Impact
-\$338,603
-\$95,123
\$27,949
\$709,501
\$358,047
-\$69,554
\$35,833
-\$47,839
-\$115,821
\$20,840
\$31,104
\$1,389
<b>\$468,541</b>



# Congestion Impact Calculation Results By Zone 9/22/03

22-Sep-03

Bid Production Cost	
Zone	Impact
CAPITL	-\$7,752
CENTRL	-\$32,570
DUNWOD	\$0
GENESE	\$5,354
HUDVL	-\$3,511
LONGIL	-\$5,409
MHKVL	-\$17,655
MILLWD	\$0
N.Y.C.	\$367,706
NORTH	\$175
WEST	-\$49,614
<b>NY Total</b>	<b>\$256,724</b>
HQ	-\$144,096
NPX	\$250
OH	\$0
PJM	-\$82,884
<b>Imports Total</b>	<b>-\$226,730</b>
<b>Total</b>	<b>\$29,994</b>

Load Payments	
Zone	Impact
CAPITL	-\$16,708
CENTRL	-\$20,399
DUNWOD	-\$3,990
GENESE	-\$16,732
HUDVL	-\$20,629
LONGIL	-\$16,572
MHKVL	-\$9,089
MILLWD	-\$4,823
N.Y.C.	\$772,438
NORTH	-\$3,994
WEST	-\$25,071
<b>Total</b>	<b>\$634,431</b>
<b>TCC Credit Lost Due to No Constraints</b>	<b>\$828,740</b>
<b>Net Load Payments Due to Congestion</b>	<b>-\$194,309</b>

Congestion Payments	
Zone	Impact
CAPITL	\$350
CENTRL	-\$3,482
DUNWOD	\$437
GENESE	-\$5,456
HUDVL	\$185
LONGIL	\$29,710
MHKVL	\$227
MILLWD	\$244
N.Y.C.	\$896,578
NORTH	\$0
WEST	-\$8,830
<b>Total</b>	<b>\$909,963</b>
<b>TCC Hedge</b>	<b>\$828,740</b>
<b>TCC Unhedged Congestion Payments</b>	<b>\$81,224</b>

Generation Payments	
Zone	Impact
CAPITL	-\$27,123
CENTRL	-\$72,955
DUNWOD	\$0
GENESE	\$2,176
HUDVL	-\$25,595
LONGIL	-\$64,477
MHKVL	-\$21,311
MILLWD	-\$11,521
N.Y.C.	\$607,818
NORTH	-\$7,670
WEST	-\$117,551
<b>NY Total</b>	<b>\$261,792</b>
HQ	-\$152,809
NPX	-\$2,835
OH	-\$17
PJM	-\$258,371
<b>Imports Total</b>	<b>-\$414,032</b>
<b>Total</b>	<b>-\$152,240</b>



# Congestion Impact Calculation Results By Constraint

## 9/22/03

22-Sep-03

Monitored Facility	Contingency	CAPITL	CENTRL	DUNWOD	GENESE	HUDVL	LONGIL	MHKVL	MILLWD	N.Y.C.	NORTH	WEST	Grand Total
### Energy+Losses		-\$17,058	-\$16,917	-\$4,427	-\$11,276	-\$20,814	-\$46,282	-\$9,316	-\$5,067	-\$124,140	-\$3,994	-\$16,241	-\$275,532
=== DNI import													
PJ - NY	Base Case												
CARLPLCE 138 EGRDNCTY 138 1	SCB: OCB1330 262 362	\$0	\$0	\$0	\$0	\$0	-\$8,432	\$0	\$0	\$0	\$0	\$0	-\$8,432
DUNWODIE 345 SHORE_RD 345 1	Base Case	\$0	\$0	\$0	\$0	\$0	\$30,341	\$0	\$0	\$0	\$0	\$0	\$30,341
E179THST 138 HELLGT_E 138 1	Base Case	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$241,454	\$0	\$0	\$241,454
ELWOOD_W 138 GREENLWN 138 1	NRTHPORT138WELWOOD_E138_681	\$0	\$0	\$0	\$0	\$0	-\$14,980	\$0	\$0	\$0	\$0	\$0	-\$14,980
OAKDALE_230 WATRCURE 230 1	WATRCURE345_OAKDALE_345_31	\$350	-\$3,482	\$437	-\$5,456	\$185	\$1,713	\$227	\$244	\$4,534	\$0	-\$8,830	-\$10,078
RAINEY_138 VERNON_138 1	Base Case	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$229,041	\$0	\$0	\$229,041
	SCB: GOETH(8): 42 26 21 GOW	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$77,113	\$0	\$0	\$77,113
VALLYSTR 138 EGRDNCTY 138 1	BUS: E F BARRET 292 459 BA	\$0	\$0	\$0	\$0	\$0	\$21,068	\$0	\$0	\$0	\$0	\$0	\$21,068
VERNON_138 KENTAVE_138 1	Base Case	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$344,436	\$0	\$0	\$344,436

<b>Total Load Payment Impact</b>	<b>-\$16,708</b>	<b>-\$20,399</b>	<b>-\$3,990</b>	<b>-\$16,732</b>	<b>-\$20,629</b>	<b>-\$16,572</b>	<b>-\$9,089</b>	<b>-\$4,823</b>	<b>\$772,438</b>	<b>-\$3,994</b>	<b>-\$25,071</b>	<b>\$634,431</b>
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<b>Total Congestion Payment Impact</b>	<b>\$350</b>	<b>-\$3,482</b>	<b>\$437</b>	<b>-\$5,456</b>	<b>\$185</b>	<b>\$29,710</b>	<b>\$227</b>	<b>\$244</b>	<b>\$896,578</b>	<b>\$0</b>	<b>-\$8,830</b>	<b>\$909,963</b>
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Total Generation & Import Revenue Impact

Monitored Facility  
 ### Energy+Losses  
 === DNI import  
 PJ - NY  
 CARLPLCE 138 EGRDNCTY 138 1  
 DUNWODIE 345 SHORE\_RD 345 1  
 E179THST 138 HELLGT\_E 138 1  
 ELWOOD\_W 138 GREENLWN 138 1  
 OAKDALE\_230 WATRCURE 230 1  
 RAINEY\_138 VERNON\_138 1  
 VALLYSTR 138 EGRDNCTY 138 1  
 VERNON\_138 KENTAVE\_138 1

Contingency  
 Base Case  
 SCB: OCB1330 262 362  
 Base Case  
 Base Case  
 NRTHPORT138WELWOOD\_E138\_681  
 WATRCURE345\_OAKDALE\_345\_31  
 Base Case  
 SCB: GOETH(8): 42 26 21 GOW  
 BUS: E F BARRET 292 459 BA  
 Base Case  
 Grand Total

Load Payment Impact	TCC Credit Lost	Net Load Payments
-\$275,532	\$0	-\$275,532
-\$8,432	-\$4,053	-\$4,379
\$30,341	\$9,678	\$20,663
\$241,454	\$160,940	\$80,515
-\$14,980	-\$5,030	-\$9,950
-\$10,078	\$12,939	-\$23,017
\$229,041	\$211,948	\$17,093
\$77,113	\$78,955	-\$1,842
\$21,068	\$9,042	\$12,026
\$344,436	\$354,323	-\$9,887
<b>\$634,431</b>	<b>\$828,740</b>	<b>-\$194,309</b>

Congestion Payment Impact	TCC Hedged	Total Unhedged Congestion Payment
-\$8,432	-\$4,053	-\$4,379
\$30,341	\$9,678	\$20,663
\$241,454	\$160,940	\$80,515
-\$14,980	-\$5,030	-\$9,950
-\$10,078	\$12,939	-\$23,017
\$229,041	\$211,948	\$17,093
\$77,113	\$78,955	-\$1,842
\$21,068	\$9,042	\$12,026
\$344,436	\$354,323	-\$9,887
<b>\$909,963</b>	<b>\$828,740</b>	<b>\$81,224</b>

Generation & Import Revenue Impact
-\$270,366
\$10,716
-\$170,080
-\$8,023
\$21,635
\$94,672
-\$35,105
-\$25,351
\$89,127
\$16,749
\$7,501
\$116,289
<b>-\$152,237</b>



# Calculation Results Observations

- Two Days Results Were Very Different
- Unit Commitment Was Especially Important to “No Constraints” Case
- Lots of Data, But Reporting is Getting Crisp (Too Dense?)
- Results Are Very Sensitive to Assumptions
- Assumption Details and Calculation Process Need to Be Documented, then Frozen



# Next

## **PROBE Software**

- Refine PROBE Modeling to Tighten SCUC/PROBE Alignment (Allocation of Costs to Constraints)
- Further Test Unit Commitment and Benchmarking
- Develop PROBE Automation of Metrics Calculation
- Develop Automated Way to Handle Normalized Network and Interface to Bid Data
- Develop TCC Cost Data and PROBE Handling

## **Calculation**

- Document Calculation Process and Freeze
- Produce 2003 Metrics by Month and Annual Total
- Report Metrics Monthly Going Forward



# Congestion Impact Reporting Suggestions

- Annual Total or Year-to-Date
- Monthly Totals

	Report By			
	NY Total	Zones	Monitored Element	Contingency
Generation & Import Bid Production Cost	✓	✓	No	No
Total Load Payment	✓	✓	✓	✓
TCC Credit Lost Due to No Constraints	✓	No	✓	✓
Net Load Payments Due to Congestion	✓	No	✓	✓
Total Load Congestion Payments	✓	✓	✓	✓
Load Congestion Payments TCC Hedge	✓	No	✓	✓
TCC Unhedged Load Congestion Payments	✓	No	✓	✓
Total Generation & Import Payment	✓	✓	✓	✓

