

NYISO's Recommendation for Treatment of SCRs in the IRM Study

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Topics

- ◆ **Purpose of this presentation**
- ◆ **NYISO Recommendation**
 - *Performance Basis for SCRs*
 - *Effective Capacity Value*
 - *Fatigue Factor*
- ◆ **Summary of Options for the 2013 IRM Study**
- ◆ **SCR Model Values for each Option**
- ◆ **Appendix**

Additional Analysis for NYISO Recommendation to ICS

- ◆ **NYISO expanded analysis provided to ICS by Mark Younger on 6/2/12 to include all zones**
- ◆ **NYISO evaluated SCR Study comments and proposed changes to treatment of SCRs in the IRM Study**
- ◆ **NYISO made recommendation to the ICS Chair on June 8 for discussion at the EC**
- ◆ **This presentation provides the detail requested by the ICS Chair to support the NYISO's recommendation**

NYISO Recommendation to ICS Performance Basis: ACL with Translation Factor of .95

- ◆ **ISO believes that ACL is the appropriate measure of capacity performance.**
 - *If ACL remains as the performance basis, the NYISO recommends that Translation Factor remain at .95*
 - *With the exception of zone K, CBL response for 2011 events exceeds 95% of ACL performance factors (outlined columns on next slide)*
 - Comparison of best 4-hour event response under both methods shows that zone J with CBL response as 85% of ACL response and zone K with CBL response as 94% of ACL response (values in third and fifth columns on next slide)
- ◆ **If the ICS feels that SCR performance should be based on CBL for the IRM Study, CBL performance should be based on the best 4-hours of response.**
 - *If the CBL becomes the performance basis, the Translation Factor would be removed.*
 - The purpose of the Translation Factor was to derate performance based on ICAP measures to a CBL equivalent.

Performance Basis Options and Recommendations for the IRM

Superzone	ACL: Best 4 hours Summer 2012 Performance Factors based on SCR Program Rules	ACL: Best 4 hours Summer 2011 events only All obligated	ACL: Best 4 hours Summer 2011 events only Reported CBL data	CBL: Best 4 hours Summer 2011 events only	CBL: All hours Summer 2011 events only
A – E	.9760	.970	1.049	.928	.910
F – I	.9124	.916	1.019	.966	.948
J	.9201	.942	1.068	.799	.770
K	.8581	.752	.874	.705	.692
Overall	.9490	.931	1.033	.876	.855

Current basis used in IRM

CBL Alternative

Measurement methods with the same time basis

NYISO Recommendation to ICS Effective Capacity Value: .95

- ◆ **The Effective Capacity Value is intended to account for SCR performance changes after the required performance period during an event**
- ◆ **If ICS continues to use ACL performance, an adjustment for the Effective Capacity Value (ECV) reported in the SCR Study may be appropriate.**
 - *The NYISO recommends an ECV adjustment factor of .95 in addition to the Translation Factor used with ACL performance*
 - *The proposed factor of .95 is based on the interpolation of the ECV reflected between the values at six hours and ten hours in the SCR Study*
- ◆ **If the ICS elects to use CBL performance, the ECV adjustment factor would also apply.**

NYISO Recommendation to ICS: Fatigue Factor of .95

- ◆ **No empirical evidence to indicate that SCRs would not continue to respond to multiple events**
- ◆ **However, there are concerns that some fatigue may occur if SCRs are deployed as frequently as past IRM Studies show that SCRs would be needed**
- ◆ **As an alternative to limiting the number of calls in the IRM model for the 2013 IRM, the NYISO recommends an additional derate factor of .95**
- ◆ **A sensitivity case for the 2013 IRM will evaluate the impact of limiting the number of calls per month to eight calls per zone**

Options for Estimating SCRs in the IRM Study

- ◆ **Current Method:**

- *SCR Forecasted Enrollment * ACL Performance * Translation Factor of .95*

- ◆ **NYISO Recommendation**

- *SCR Forecasted Enrollment * ACL Performance * Translation Factor of .95 * ECV of .95 * Fatigue Factor of .95*

- ◆ **Alternative NYISO Recommendation**

- *SCR Forecasted Enrollment * CBL Performance * ECV of .95 * Fatigue Factor of .95*

SCR Values for 2013 IRM: Current Method

Super zone	SCR Enrollment Forecast for 2013	ACL Performance Factor Best 4 hours	Translation Factor	CBL Performance Factor Best 4 hours	Effective Capacity Value	Fatigue Factor	Model Value
A – E	977.3	.9760	.95	n/a	n/a	n/a	906.2
F - I	174.2	.9124	.95	n/a	n/a	n/a	151.0
J	394.7	.9201	.95	n/a	n/a	n/a	345.0
K	93.8	.8581	.95	n/a	n/a	n/a	76.5
Total	1640.0						1478.6

SCR Values for 2013 IRM: NYISO Recommendation

Super zone	SCR Enrollment Forecast for 2013	ACL Performance Factor Best 4 hours	Translation Factor	CBL Performance Factor Best 4 hours	Effective Capacity Value	Fatigue Factor	Model Value
A – E	977.3	.9760	.95	n/a	.95	.95	817.8
F - I	174.2	.9124	.95	n/a	.95	.95	136.2
J	394.7	.9201	.95	n/a	.95	.95	311.4
K	93.8	.8581	.95	n/a	.95	.95	69.0
Total	1640.0						1334.4

SCR Values for 2013 IRM: Alternative NYISO Recommendation

Super zone	SCR Enrollment Forecast for 2013	ACL Performance Factor Best 4 hours	Translation Factor	CBL Performance Factor Best 4 hours	Effective Capacity Value	Fatigue Factor	Model Value
A – E	977.3	n/a	n/a	.928	.95	.95	818.4
F - I	174.2	n/a	n/a	.966	.95	.95	151.9
J	394.7	n/a	n/a	.799	.95	.95	284.7
K	93.8	n/a	n/a	.705	.95	.95	59.7
Total	1640.0						1314.7

Comparison of Derated SCR Values for 2013 IRM

2013 SCR Enrollment Forecast for IRM: 1640 MW

Superzone	Current Method (ACL * TF)	NYISO ACL-based Recommendation (ACL * TF * ECV * FF)	NYISO CBL-based Recommendation (CBL * ECV * FF)
A – E	906.2	817.8	818.4
F - I	151.0	136.2	151.9
J	345.0	311.4	284.7
K	76.5	69.	59.7
Total	1478.6	1334.4	1314.7
Net Derate from 2013 Forecast of 1640 MW	90.2%	81.4%	80.2%

ACL = Average Coincident Load

CBL = Customer Baseline Load

TF = Translation Factor

ECV = Effective Capacity Value

FF = Fatigue Factor

APPENDIX

Zonal 2011 Event Response Data

Zonal SCR Response to 2011 Events: Best 4 Hours

BEST 4 EVENT HOURS		A	B	C	E	F	G	H	I	J	K	Total
A	Enrolled MW - All	334.4	120.5	136.9	45.6	137.7	67.2	10.1	36.1	464.1	152.0	1,504.5
B	ACL Based Response - ALL	339.7	106.3	136.3	53.0	131.5	65.6	9.5	28.7	456.0	117.1	1,443.7
C	ACL Performance Level-All (Row B/Row A)	101.6%	88.2%	99.5%	116.3%	95.5%	97.7%	94.6%	79.5%	98.3%	77.0%	96.0%
D	Enrolled MW - SCRs Reporting CBL data	306.4	87.0	109.3	39.2	121.5	48.0	8.4	27.1	357.5	113.0	1,217.3
E	ACL Based Response	325.5	84.1	124.5	48.8	126.1	53.3	9.2	25.2	398.6	101.1	1,296.5
F	ACL Performance Level (Row E/Row D)	106.3%	96.7%	113.9%	124.7%	103.8%	111.0%	110.1%	93.3%	111.5%	89.5%	106.5%
G	CBL Based Response	309.1	64.1	92.8	36.7	123.4	44.6	9.3	20.8	285.8	79.7	1,066.2
H	CBL Response as Percent of ACL Response (Row G/Row E)	94.94%	76.24%	74.56%	75.22%	97.89%	83.63%	100.13%	82.28%	71.70%	78.83%	82.24%
I	CBL Performance Level (RowG/Row D)	100.9%	73.7%	84.9%	93.8%	101.6%	92.8%	110.2%	76.8%	79.9%	70.5%	87.6%

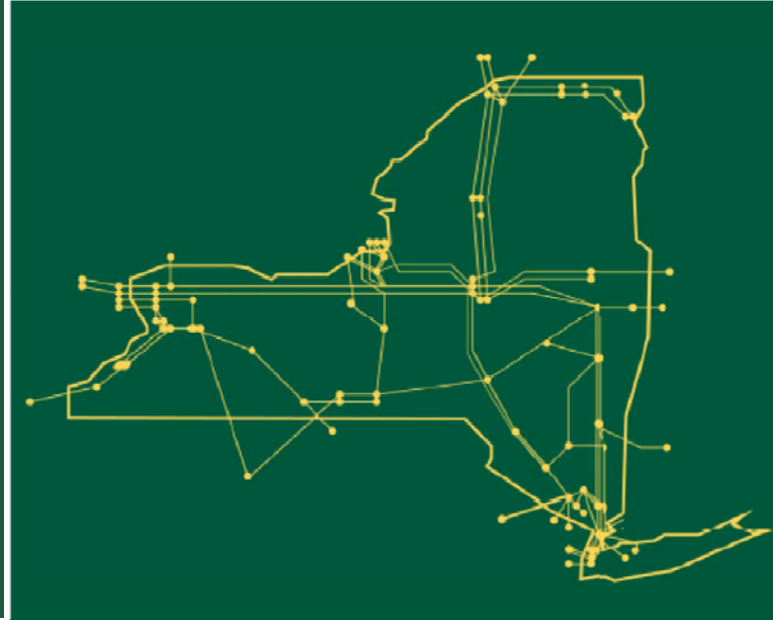
Note: Zone J results match analysis provided by Mark Younger to ICS on June 2, 2012. All other zones were processed using the same calculations.

Zonal SCR Response to 2011 Events: All Event Hours

	ALL EVENT HOURS	A	B	C	E	F	G	H	I	J	K	Total
A	Enrolled MW - All	334.4	120.5	136.9	45.6	137.7	67.2	10.1	36.1	464.1	152.0	1,504.5
B	ACL Based Response - ALL	332.8	104.3	131.2	50.2	128.4	64.3	9.5	27.6	437.4	114.3	1,399.9
C	ACL Performance Level-All (Row B/Row A)	99.5%	86.5%	95.8%	110.2%	93.3%	95.7%	94.1%	76.6%	94.2%	75.2%	93.1%
D	Enrolled MW - SCRs Reporting CBL data	306.4	87.0	109.3	39.2	121.5	48.0	8.4	27.1	357.5	113.0	1,217.3
E	ACL Based Response	319.5	82.2	120.3	46.4	123.2	52.1	9.2	24.3	381.8	98.8	1,257.9
F	ACL Performance Level (Row E/Row D)	104.3%	94.6%	110.0%	118.3%	101.4%	108.5%	109.6%	89.8%	106.8%	87.4%	103.3%
G	CBL Based Response	306.2	62.0	89.4	35.6	121.5	43.5	9.1	20.2	275.1	78.3	1,040.9
	CBL Response as Percent of ACL Response											
H	(Row G/Row E)	96%	75%	74%	77%	99%	83%	99%	83%	72%	79%	83%
I	CBL Performance Level (RowG/Row D)	99.9%	71.3%	81.8%	91.0%	100.1%	90.5%	108.9%	74.5%	77.0%	69.2%	85.5%

Note: Zone J values match analysis provided by Mark Younger to ICS on June 2, 2012. All other zones were processed using the same calculations.

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