



955 Jefferson Ave.  
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Norristown, PA 19403-2497

October 5, 2011

VIA ELECTRONIC TRANSMISSION

OPERATING COMMITTEE

Dear Committee Members:

2011 / 2012 PJM WINTER WEEKLY RESERVE MARGIN TARGET

Based on analysis results provided by PJM Resource Adequacy Planning Department Staff and reviewed by the Resource Adequacy Analysis Subcommittee (RAAS), the Planning Committee (PC) has unanimously agreed to recommend a **29% minimum winter reserve target** to be applied to the PJM RTO for the upcoming 2011/2012 winter period. This reserve margin is based on unit summer ratings and is expressed as a percentage of the forecasted weekly peak load. With this recommendation, the PJM Operations Department would coordinate generator maintenance scheduling over the winter period to seek to preserve a 29% margin after units on a planned or maintenance outage are removed. **Note this margin is a guide to be used by PJM Operations and is not an absolute requirement.**

The recommended 29% reserve target would replace the 26% target that was in effect for the PJM RTO for the 2010 / 2011 winter period. The increase in the reserve target is due to three factors: a change in the MARS calendar year alignment algorithm, a slight reduction in the February monthly forecast load, and the inclusion of the Duke Energy Ohio-Kentucky (DEOK) zone into this year's model. This change in the reserve target is consistent with changes observed in previous years. Over the last ten years, the PJM reserve target has varied between 25% and 34%.

Results of this year's winter weekly reserve target study are detailed on the following two pages. The study results indicate that the "one day in ten years" loss of load expectation standard can be maintained across the PJM RTO with an increase in the Winter Weekly Reserve Target to 29%.

The PC recommends that the Operating Committee (OC) endorse the use of the recommended 29% winter weekly reserve target for all planned outage scheduling activities during the 2011/2012 winter period. The PJM staff fully endorses this recommendation by the PC. If you have any questions, please contact Tom Falin at email address [falint@pjm.com](mailto:falint@pjm.com) or phone number 610-666-4683.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Herling", with a long horizontal stroke extending to the right.

Steven R. Herling  
Chairman, Planning Committee

SRH/TAF/docs 615650v1

cc: Planning Committee  
Reserve Requirement Assumptions Working Group

PJM Interconnection Staff:  
Patil Sanjay, Dave Souder, Ed Hoey



## Operations Related Assessments

- **Winter Weekly Reserve Target Analysis**

PJM Staff recommend 29% as the minimum winter reserve target to be applied to the PJM RTO for the upcoming 2011 / 2012 winter period. The recommended value is required to be an integer value, due to computer application requirements. This value represents an increase from the current margin of 26%. The 29% target is based on unit summer ratings and is expressed as a percentage of the forecasted weekly peak load.

Table II-9 shows the results of the MARS analysis for the 2011 / 2012 winter period. The average reserve level over the 13 week winter period is 28.6%. This margin is higher than the 25.8% calculated in last year's study, due to changes in the PJM load shape over the winter period (see Figure II-12). Compared to the 2010 RRS assessment, the winter weeks in Figure II-13 that caused the increase are 1, 10, and 13.

The difference in the load model shape for these weeks is explained by: 1) a different calendar alignment (different years start on a different day of week) of the daily peaks per the MARS algorithms, 2) a relatively slight reduction of the February monthly peak forecast load, and 3) including the DEOK zone into this years' model.

Similar to the 2010 RRS assessment, this assessment set to zero the load management resources in the step 2 values used in the Emergency Operating Procedure Table, for the non-Summer period. DR is not subject to a specified penalty metric for non-performance outside the summer period (see Section 8.5 of PJM Manual 18). The study procedure was modified in 2010 to recognize this limitation on the availability of DR. Based on this procedure and the analysis, PJM Planning staff believes that maintaining a minimum 29% reserve target for the 2011/2012 13-week winter operating period ensures that the actual winter loss of load risk is consistent with that modeled in the 2011 PJM RRS. This recommendation was unanimously endorsed by the RAAS.

With this recommendation, the PJM Operations Department would coordinate generator maintenance scheduling over the winter period to seek to preserve a 29% margin after units on planned and maintenance outages are removed. **This margin is a guide to be used by PJM Operations and is not an absolute requirement.**

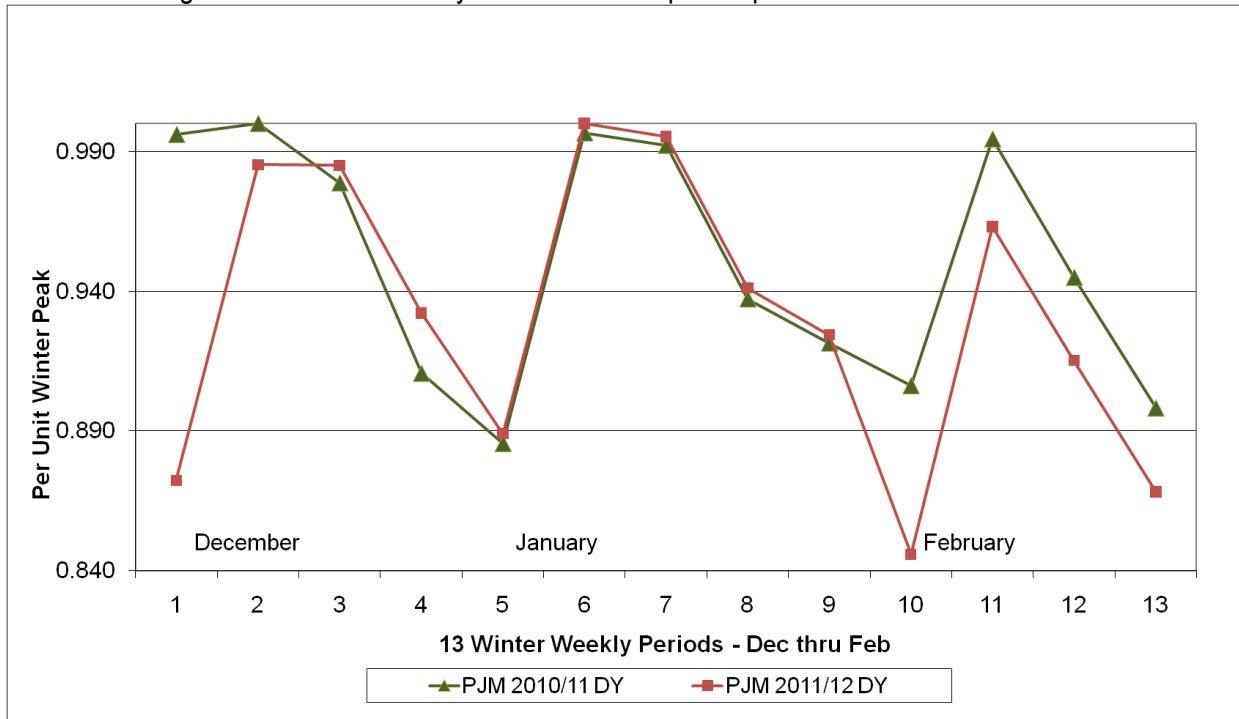
Endorsement of the 29% Winter Weekly Reserve Target from the PJM Planning Committee (PJM-PC) will be requested at the October 05, 2011 meeting. The recommendation on this item will be forwarded to the PJM Operating Committee (PJM OC) and the PJM Operations Staff responsible for generating unit planned maintenance scheduling.

There are six Emergency Operating Procedure (EOP) levels available to report LOLE: 1) Operating reserves, 2) Load Management resources (DR), 3) 30 minute reserves, 4) Voltage reduction, 5) 10 minute reserves, and 6) Appeals for public curtailment. The reported LOLE values are before any Voltage reductions, but do include load management curtailments. Reported values are after implementation of a given EOP level, the 30 minute reserve level.

The procedure used for this assessment uses Multi-Area Reliability Simulation (MARS) modeling and Monte-Carlo solution techniques. MARS has many event driven table entries which allow for a closer match to Operation's practices.



Figure II - 1: Winter Weekly MARS Load Shape comparison - 2010 and 2011 RRS



In Figure II – 12, the 2010 / 11 DY shape is from the 2010 RRS while the 2011 / 2012 DY is from the 2011 RRS model.

Table II - 1: Winter Weekly Reserve Target

Month	Calendar Week	% Weekly Reserves level for 1D/10 YR	LOLE ( 3rd Margin State )
December	49	36.35	0.00E+00
	50	21.21	1.09E-04
	51	21.78	3.22E-05
	52	28.78	0.00E+00
January	1	31.12	0.00E+00
	2	38.22	1.14E-04
	3	21.07	2.48E-05
	4	27.42	0.00E+00
	5	34.31	0.00E+00
February	6	38.29	0.00E+00
	7	21.42	1.12E-04
	8	21.49	0.00E+00
	9	28.56	0.00E+00
<b>Average Weekly Reserves</b>		<b>28.5</b>	