



Cold Weather Operations and Order 787 Update

January 8, 2014 - MIC
Adam Keech

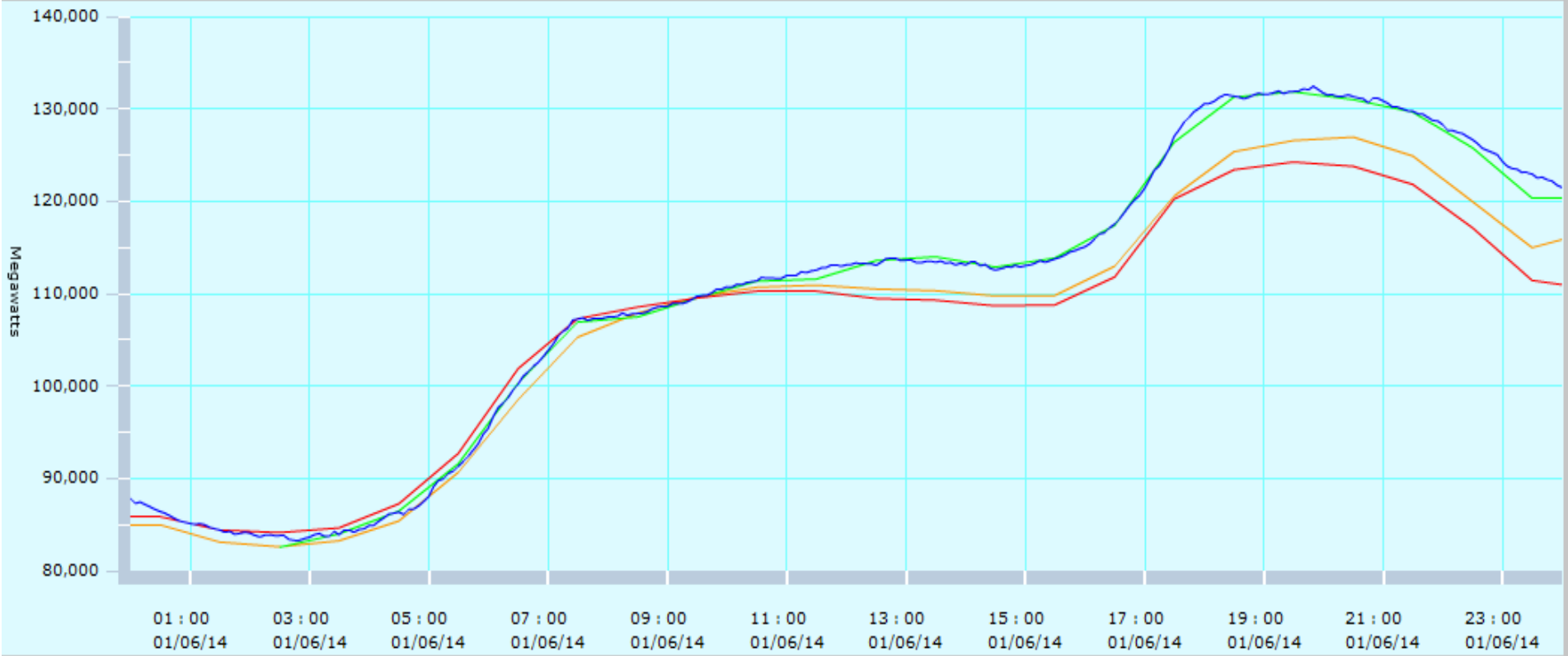
- Negative temperatures in western portion of the footprint. Falling temperatures in the east
- Load forecast for evening peak of 127,000 MW



January 6, 2014 Timeline

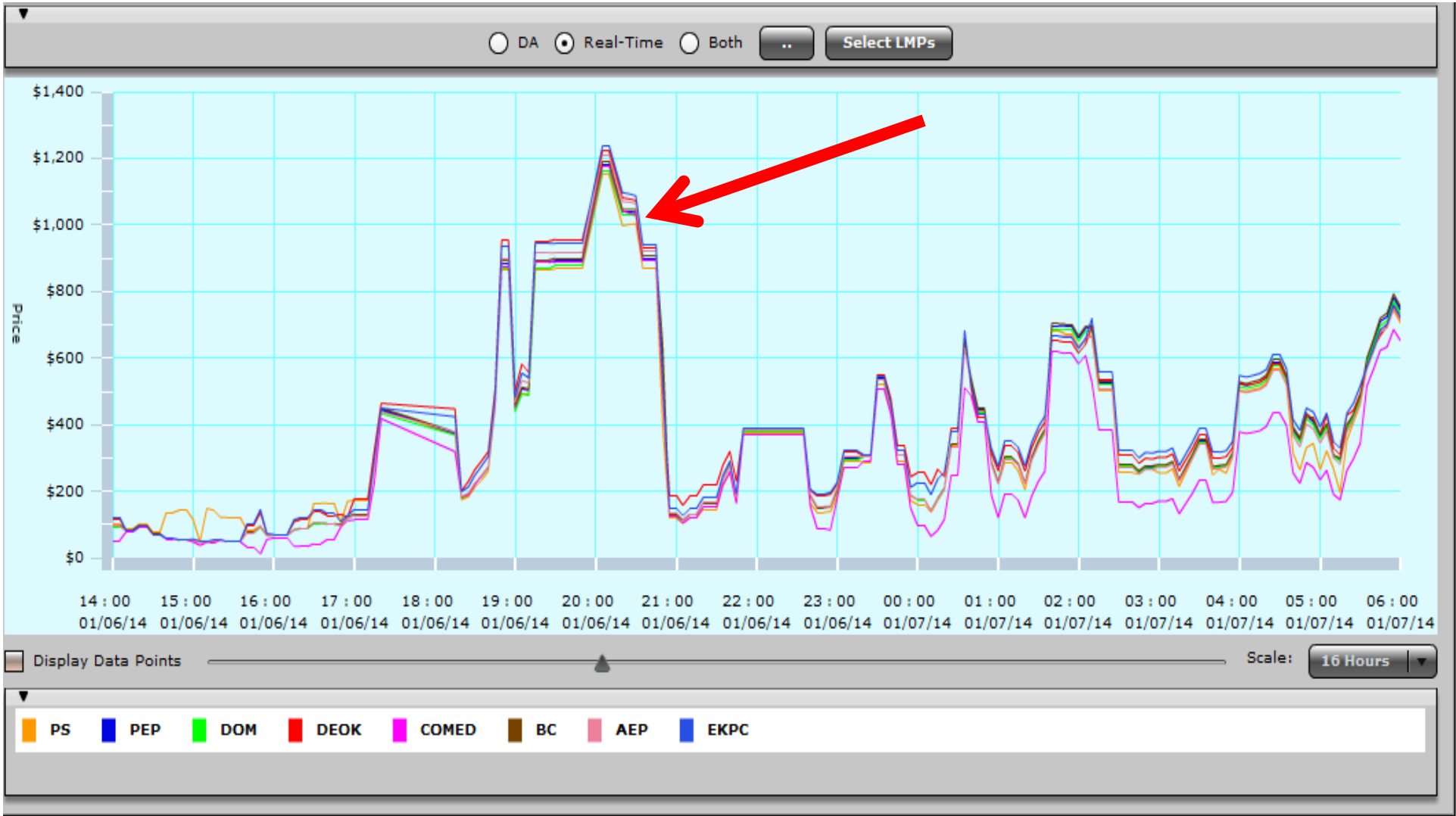
- **17:01** - ~1500 MW simultaneous unit trips
 - PJM initiates Synch Reserve event
 - Request shared reserves with NYISO
 - Load coming in much faster and higher than anticipated
 - Actual load 5000 MW above forecast
- **18:09** – Synch Reserve event ended
- **19:27** – Large unit trip
 - Issued Voltage Reduction Warning and Max Generation Action (do not load)
- **19:50** – PJM initiates 5% voltage reduction action across the RTO
 - Automatically initiates shortage pricing
- **20:47** – PJM ends voltage reduction

01/06/14 01/07/14 01/08/14 PJM RTO Total



Display Data Points

Original Forecast Day Ahead Instantaneous



- **Cold Weather Emergency C2 Issued**
 - Notification of system conditions and request for conservation
- Valley load expected to be 116,000 MW, comes in over 120,000 MW
- Morning peak expected ~ 140,000 MW



January 7, 2014 Timeline

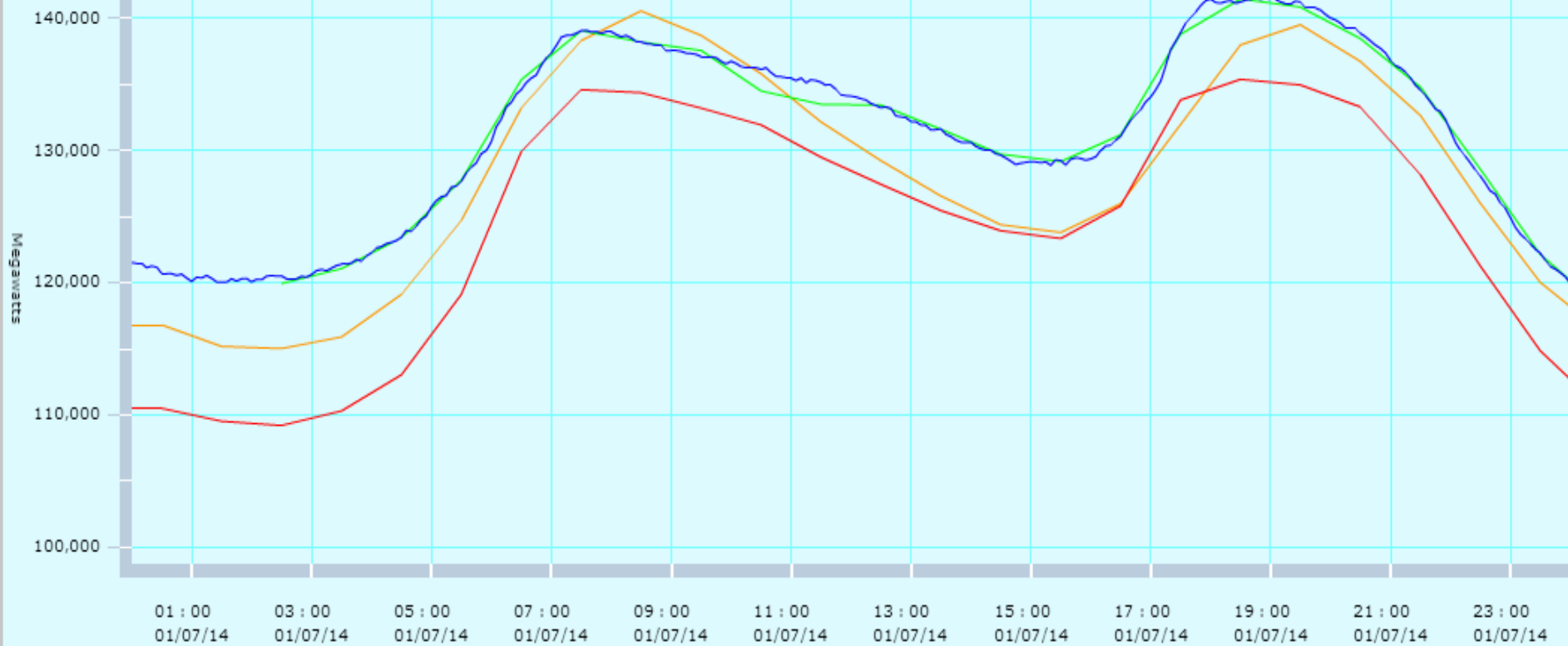
- **02:51** – Issued voltage reduction warning for the RTO
- **04:30** – Deploy long/short lead time emergency DR for RTO effective 0630
 - Max Gen Action for the RTO
- **06:00** – Emergency purchases from NYISO and MISO begin to flow
- **06:21** – Load all max emergency generation
- **06:27** – 100% synch reserves for low ACE
- **08:18** – unit trips; 100% synch reserves

- **15:00** – Max Emergency Gen Action and deploy Emergency DR for evening peak across RTO (~2900 MW)
- Significant amount more interchange sinking in PJM than expected
 - 8,000-10,000 MW at times – most coming from MISO
- **18:16** – Cancelled Emergency Demand Response



01/07/14 01/08/14 01/09/14

PJM RTO Total

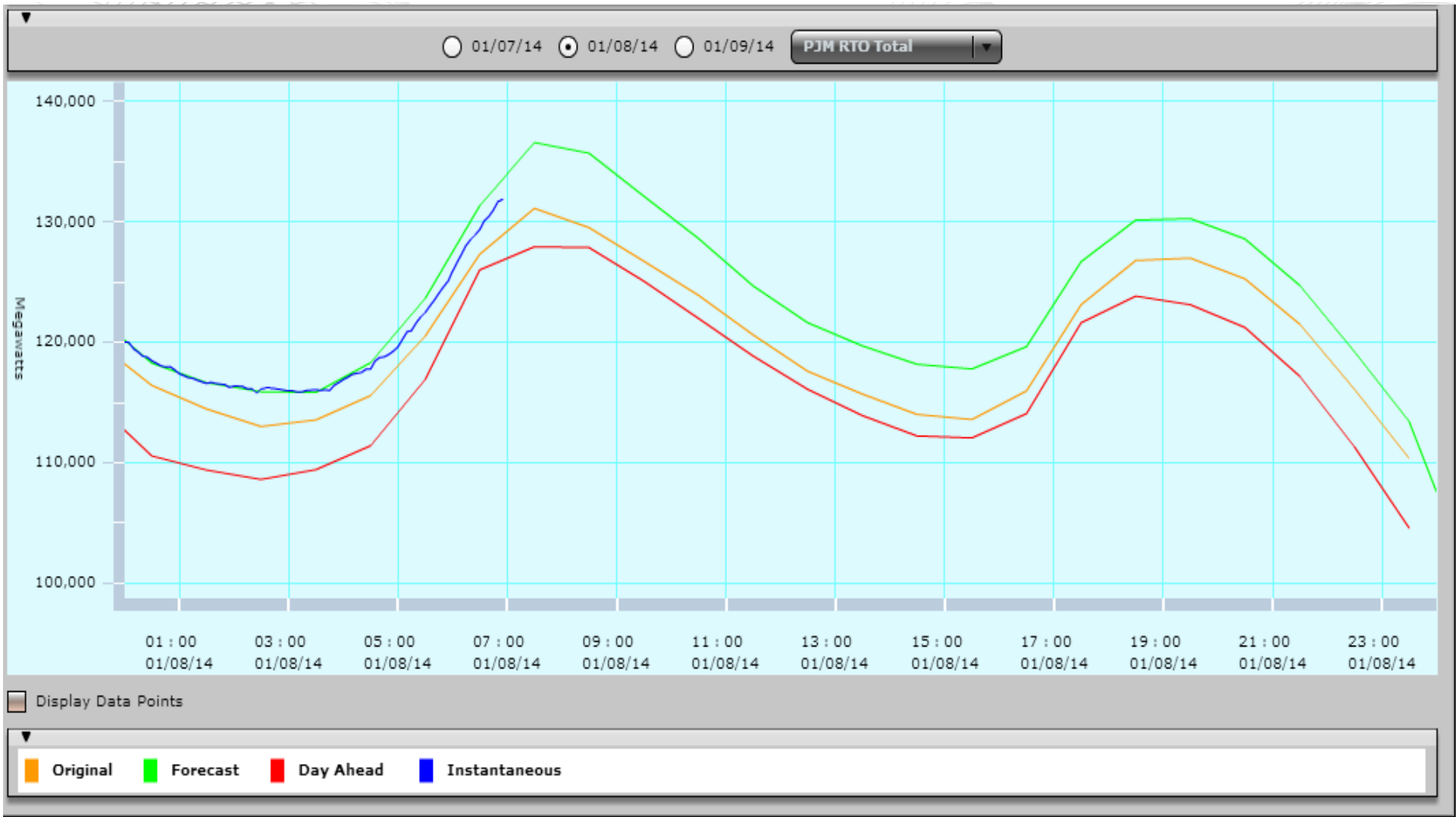


Display Data Points

Original Forecast Day Ahead Instantaneous

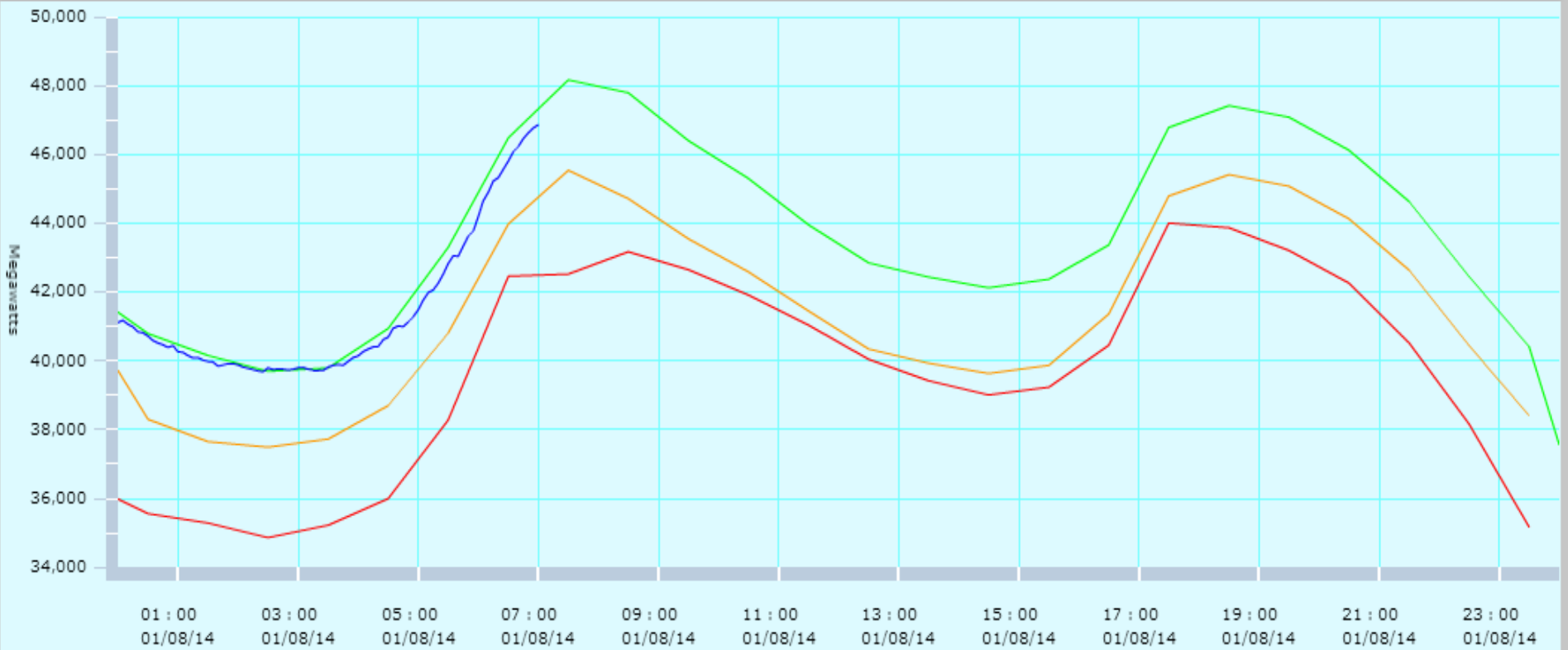
- C2 issued again for today
- Valley Load expected 119,000 MW came in closer to 116,000 MW
- Expecting a morning peak of 136,600 MW
- Temperatures warm up in the afternoon
- Evening peak of 130,000 MW

- **05:00** – Deploy emergency DR across the footprint for 07:00
 - Also issue Max Gen Action (do not load)
- **06:00** – Request bids for emergency energy
 - Done as a precaution
- **06:30** – Request for cancellation of DR if possible
 - Load coming in significantly under forecast
- **07:30** – Actual morning peak 134,500 MW
- **09:00** – Formally cancel DR and Max Gen Action



01/07/14 01/08/14 01/09/14

Mid-Atlantic Region



Display Data Points

Original Forecast Day Ahead Instantaneous

- Data sharing between gas and electric sectors subject to confidentiality rules for each company
- PJM filed two waivers last Friday to waive data confidentiality clauses in the OA
 1. Temporary waiver until Jan 10
 2. Temporary waiver until Mar 31

- First waiver was approved Monday
 - PJM has supplied generation commitment schedules to the respective pipeline companies since that waiver was approved
 - Several conference calls to discuss gas availability in certain areas
- Second waiver has a comment period until Jan 10
- Pipeline companies did not file a similar waiver and are but working through the process