Winter 2015 / 2016 Preparedness

November 19, 2015
Illinois Commerce Commission

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PJM Interconnection
When are transmission system operations most challenged?

Some common sense indicators:

- Season of Year
- Day of Week
- Duration / Damage
- Operating Challenges
  - and weather matters.
Summer and Winter events present different operational challenges:

- **Summer time event (usually hot weather):**
  - One peak load each day (about 5 - 6 pm) and usually have higher summer peak loads
    - Generation assets usually operate well in hot weather
    - Transmission lines can have challenges -- over-heat / sag / become congested

- **Winter time event (usually cold weather):**
  - Two peak loads each day (about 7 am and 5:30 pm). Each daily peak usually lower than summer peak
    - Generation assets can have a difficult time starting / operating
    - Natural gas supply availability challenges / coal piles freeze
  - Usually few transmission line problems
### 2015 / 2016 Projected Capacity and Peak Load

<table>
<thead>
<tr>
<th>RTO</th>
<th>MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015 / 2016 Unrestricted Load Forecast*</td>
<td>131,720</td>
</tr>
<tr>
<td>2015 Total Installed Capacity (ICAP)**</td>
<td>177,628</td>
</tr>
</tbody>
</table>

*50/50 PJM Coincident Peak Load. Unrestricted means Demand Response was not subtracted

**ICAP, includes generation internal to PJM (internal Reliability Pricing Model (RPM) / Fixed Resource Requirement (FRR) and other internal iron in the ground), external imports to PJM, and Annual DR for Dec. 1, 2015 as of Sep. 8, 2015*
## PJM Winter Preparations

### PJM Studies, Data Requests & Drills

- **PJM Operations Assessment Task Force (OATF) Winter Operations Study (Nov. 2015)**
- **PJM Emergency Procedures Drill (Nov. 10, 2015)**
- **Fuel Inventory Survey (Nov. 2015)**

### Reliability Coordinator Winter Preparation Meetings

- **PJM / DEP / VACAR (Sept. 30, 2015)**
- **SERC Operating Committee / SERC RCS / VACAR (Oct. 2015)**
- **Reliability First (Nov. 2015)**
- **Joint MISO/PJM/NPCC (Nov. 2015)**
- **NYISO / PJM (Nov. 2015)**
- **TVA / PJM (Nov. 2015)**
- **Completion of EIPC study on Gas / Electric Infrastructure Adequacy**

### Gas / Electric Coordination

- **Joint INGAA – Inter-RTO Council Meeting (Oct. 2015)**
- **PJM Winter gas preparation meeting (October 26 & 27, 2015)**
- **MOU with PJM Pipelines signed July 2015**
- **Daily, Weekly, Monthly, and Seasonal Coordination with Pipelines in PJM footprint**
- **LDC outreach in progress**
Monthly coordination of gas and generator planned maintenance between PJM and the pipelines

Weekly or as needed conference calls with interstate pipelines will commence starting Nov. 1 through Mar. 1
  • Weekly peak load forecast
  • Projected gas usage
  • Forecasted system conditions
  • Forecasted pipeline conditions

Daily review of gas nominations by PJM scheduled generators will start Nov. 1

Daily review of Gas Electronic Bulletin Boards (EBBs) for critical notices potentially impacting generation in the footprint

Ongoing PJM, MMU, and Pipeline MOU discussions
Fuel Mix – Existing PJM Installed Generating Capacity (MW, Capacity, December 31, 2014)

- Natural Gas, 56,811 MW
- Coal, 67,749 MW
- Nuclear, 33,708 MW
- Solar, 98 MW
- Wind, 828 MW
- Hydro, 8,166 MW
- Oil, 11,130 MW
- Waste, 968 MW
Existing Installed Capacity (MW) in Northern Illinois, by Fuel Type (December 31, 2014)

Nuclear, 10,499 MW
Gas, 8,682 MW
Coal, 5,415 MW
Wind, 333 MW
Oil, 279 MW
Solar, 3 MW