eDART Intro & Gen Checkout
Objectives

Students will be able to:

• Identify the tools used to participate in the various PJM markets
eDART

• eDART stands for electric Dispatcher Applications and Reporting Tool
  – A suite of electronic applications used to facilitate dispatcher-to-dispatcher communications, along with other engineering communication and coordination functions

• Through eDART, a user can filter outage information based on:
  – Start date, end date, ticket number and other criteria to help ease the dissemination of information to help make a comprehensive range of reports
eDART’s benefits to PJM membership include:

- A quick, 24/7 process for outage and model change request submittal
- Easy access to comprehensive information
- A simple and user-friendly online interface

eDART’s creation has greatly reduced the amount of physical paperwork and the time consuming communication of prior processes.
eDART Applications

Used to schedule the output of Susquehanna River Hydroelectric Assets

Used to capture unit data and determine critical load in system restoration plans.

Used to verify generation will not over-exceed light load margins.

Used to record and schedule:
- Generator MW Outages
- Voltage Regulator Outages
- Governor Outages
- D-Curve Adjustments
- Reactive Tests
- Reactive Test Results Tickets
- GO Survey

(IRC)
Used to verify if enough reserve MW available.
eDART Applications

- **Feedback**
  - Used to record and schedule non-generator transmission facility outages.

- **My eDART**
  - Used to coordinate the update of system restoration plans.

- **Upload**
  - Used by companies to submit changes to the transmission grid.

- **Download**

- **Trans. Tickets**

- **Network Model**
  - Used to view updates made to Object IDs.

- **Black Start**

- **Telemetry Coordination**

- **TERM**
  - Used to record and schedule line, transformer, phase shifters, series and flow devices temperature apparent power ratings.

- **Reactive Reserve**

- **Instantaneous Reserve Check**

- **Minimum Gen. Report**

- **PJM Status Report**

- **NERC Data**

- **Restoration Data**
  - Used to practice and coordinate restoration of service in PJM area after a blackout.

- **Facility Data**

- **Online Help**

- **Logout**
  - Used to update facility clearing times data used in dynamic studies.

PJM©2018
eDART Applications

Current Status Report
15 minute snapshot of current status

Peak Status Report
Forecast of system condition for the peak of the day

Supplemental Status Report (SSR)
72 hour forecast of system condition; typically for extreme hot/cold weather conditions

Gen Checkout
Used to compare and highlight discrepancies between Market Gateway bids and Available Capacity. Brings Markets and Operations together in real-time

Used to record and coordinate
- Reactive Reserve Check (RRC)
- D-Curve Review (on Gen. Tickets menu for Gen users)

Used to manage PSSE mapping information for the purpose of sending and receiving info to/from NERC SDX
Gen Checkout
What is Gen Checkout?

- eDART Generation Checkout – This program compares:
  - Unit schedule availability/bid data in Markets Gateway,
  - Unit outages submitted via Generator Ticket (eDart)
  - Stated capability to ensure accurate market data and capacity/reserve projections

- Generation Checkout occurs twice daily
  - 02:00 to check out for the same day
  - 13:30 to check out for the next day
Discrepancy Handling

Gen Checkout is basically a reporting mechanism

- All resolutions handled via Markets Gateway and/or gen tickets
- Resolutions for the Today Report must be handled by 0400
  - All call initiates process at approx. 2:00 am
- Resolutions for the Tomorrow Report must be handled by 14:15
  - 13:30 unit commitment report triggers Gen Checkout

For more information on Markets Gateway functionality, please go to http://www.pjm.com/markets-and-operations/etools/markets-gateway.aspx

For more information on eDART – Generator Ticket functionality, please go to http://www.pjm.com/markets-and-operations/etools/edart.aspx
Comparison Overview

• Gen Checkout on a per unit basis, lists the Markets Gateway values and compares them to outages in eDART

• Any issues are highlighted (yellow or red)

• Companies “Acknowledge” when Markets Gateway values are in sync with outage availability (within a specified tolerance)
  – Acknowledgement will be for Today or Tomorrow

<table>
<thead>
<tr>
<th>Gen Type</th>
<th>Warn. Level %</th>
<th>Ack. Level %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Cycle</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Diesel/CT</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Diesel/CT (Small Unit)</td>
<td>20</td>
<td>50</td>
</tr>
<tr>
<td>Hydro</td>
<td>99</td>
<td>200</td>
</tr>
<tr>
<td>Nuclear</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Nug</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Solar</td>
<td>99</td>
<td>200</td>
</tr>
<tr>
<td>Steam/Fossil</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Wind</td>
<td>99</td>
<td>200</td>
</tr>
</tbody>
</table>
ICAP = eDART ICAP
Cap Factor Non-Renewable = 1
Cap Factor Renewable < 1
## Gen Checkout Calculations

### ICAP Analysis

<table>
<thead>
<tr>
<th>Condition</th>
<th>Adjusted Capacity, ADJ. ICAP</th>
<th>Adjusted ICAP Diff (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>( \text{Adj.ICAP}_{EC} = \text{ICAP} + \text{Amb.Adj.} - \text{Reduct} - \text{Incremental} )</td>
<td>( \text{DIFF} = \frac{\text{ADJ.CAP}<em>{EC} - \text{EconomicMax}}{\text{ADJ.CAP}</em>{EC}} \times 100 )</td>
</tr>
<tr>
<td>Emergency</td>
<td>( \text{Adj.ICAP}_{EM} = \text{ICAP} + \text{Amb.Adj.} - \text{Reduct} )</td>
<td>( \text{DIFF} = \frac{\text{ADJ.CAP}<em>{EM} - \text{EmergencyMax}}{\text{ADJ.CAP}</em>{EM}} \times 100 )</td>
</tr>
</tbody>
</table>

*Note: Ambient Air values will be the opposite sign of what is reported in Generator Tickets*
### RPM Analysis**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Adjusted RPM, ADJ. RPM</th>
<th>ADJ. RPM Diff ( %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>[ Adj.\text{RPM}_{EC} = \text{RPM} + \text{Amb Adj.} - \text{Incremental} ] * Incremental = EmergencyMax – EconomicMax</td>
<td>[ \text{DIFF} = \frac{\text{ADJ. RPM}<em>{EC} - \text{EconomicMax}}{\text{ADJ. RPM}</em>{EC}} \times 100 ]</td>
</tr>
<tr>
<td>Emergency</td>
<td>[ Adj.\text{RPM}_{EM} = \text{RPM} + \text{Amb Adj.} ]</td>
<td>[ \text{DIFF} = \frac{\text{ADJ. RPM}<em>{EM} - \text{EmergencyMax}}{\text{ADJ. RPM}</em>{EM}} \times 100 ]</td>
</tr>
</tbody>
</table>

** Used when RPM committed value exceeds EcoMax and a reduction is entered less than the ICAP Value minus RPM commitment.

*Note:* Ambient Air values will be the opposite sign of what is reported in Generator Tickets.
Questions?

PJM Client Management & Services
Telephone:  (610) 666-8980
Toll Free Telephone:  (866) 400-8980
Website:  www.pjm.com

The Member Community is PJM’s self-service portal for members to search for answers to their questions or to track and/or open cases with Client Management & Services