Gas Scheduling Issues – Operator Communications

Operating Committee

July 8, 2014

Operator Communications

- Conversations between PJM and gas unit Generation Owner

  - Scheduling unit for current day and next day (after DA)

  - Swapping of fuel from gas to oil

- June 17, 2014

- Similar issues seen during January operations on much wider scale

- Actual calls and transcripts (names changed, removed sensitive info)

Operator Communications

- Call 1 – 0954 – Inquiry of Notification Time for Blues Unit 1 & 2

  - Issue – Notification Time can change on an hourly basis

- Call 2 – 0955 – Commitment of unit for current day for Blues Unit 1

  - No staffing or gas issues which would show up later in day

- Call 3 – 1405 – Staffing/Gas procurement impact on Notification Time

  - Implication – Staffing does not impact Notification Time.   DA Market clearing impacts Notification Time due to gas procurement

- Call 4 - June 17, 2014 1411:14 – Staffing impact on Notification Time

  - Implication – Staffing and Notification Time depends on DA Market clearing

- Call 5 - June 17, 2014 1851:39 – Request for Staffing and Fuel Swap

  - PJM requests staffing (no unit commitment); Unit out of fuel and must come off or swap fuel (9 minute notice)

Operator Communications

- Call 6 - June 17, 2014 1904:27 – Inquiry About Fuel Swap
  - PJM questions physical operating parameters to perform fuel swap
- Call 7 - June 17, 2014 1932:04 – Notification Time Confusion and Commitment for Next Day
  - Unit unavailable on gas until 1000 (gas schedule in eMKT was available); Speculation on run time
- Call 8 - June 17, 2014 1940:06 Swapping Fuel Schedule
  - Confirmation on available schedule for oil
- Call 9 - June 17, 2014 1941:32 Confirming Fuel Swap
  - Confusion over status of fuel swap
- Call 10 - June 17, 2014 1946:03 Confirming Schedule for Next Day
  - PJM confirms expected schedule for the next day
- Call 11 - June 17, 2014 2306:04 Release of Blues 1 Unit

Issues

- Notification Times changing hourly based on staffing? and gas procurement
  - Makes timing of commitment decisions difficult
- Confusion around process for fuel switching (changing schedule and physical unit limitations)
- PJM giving estimates for run time as basis for gas purchases
  - "Firmness" of these estimates
- Cumbersome nature of unit commitment and fuel switch decision
  - 11 phone calls for 1 unit

Generator Attributes

Unit

- Unit Status
- Resource Type
- MW Operating Limits
- Ramp Rates
- Weather and Wind Forecasts
- Startup & No Load Costs for price-based units
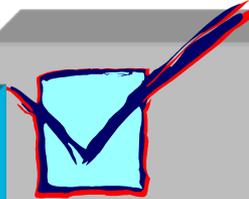
Schedule

- Schedule Types and Selection
- Offer Curves
- MW Operating Limits
- Use Startup & Noload Cost for price-based units
- Startup and Notification times
- Min an Max Data
- Condenser Data

Hourly Updates

- Commit Status
- MW Operating Limits
- Notification Time

Notification and Startup Times

The following information can be changed on the Schedule Detail page:

Notification Times

The time interval in hours, between PJM notification and the start sequence of a generating unit that is currently in one of three temperature states

- **Hot Notification Time**
- **Inter Notification Time**
- **Cold Notification Time**

Startup Times

The time interval, measured in hours, from the actual unit start sequence to the breaker close for a generating unit in one of the three temperature states

- **Hot Startup Time**
- **Inter Startup Time**
- **Cold Startup Time**

Unit Hourly Updates	Unit Detail	Energy Ramp Rates	SyncRes Ramp Rates	Weather Forecast	Wind Forecast

Unit Hourly Updates Search

Get Report

Get CSV Report

Portfolio: [▼]   Unit: [▼]

Date: 12/27/2013 [📅]
(mm/dd/yyyy)   Change Date

Hourly Values   **Apply To:**   08-23 [▼]   Apply   Use Unit Defaults

Defaults   211.0   211.0   330.0   330.0   Not Available   No

Emergency Min [211.0]   Economic Min [211.0]   Economic Max [330.0]   Emergency Max [330.0]   Commit Status [Not Available ▼]   Fixed Gen [No ▼]

Unit Hourly Updates for _____ **on 12/27/2013**

Submit

Hour Ending	Em. Min. Def.	Em. Min. MW	Ec. Min. Def.	Ec. Min. MW	CIR	Ec. Max. Def.	Ec. Max. MW	Em. Max. Def.	Em. Max. MW	Commit Status	Fixed Gen.	Notification Time.
01	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
02	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
03	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	Economic	No	(null)
04												(null)
05												(null)
06												(null)
07												(null)
08												(null)
09												(null)
10											No	(null)
11	211.0	0.0	211.0	0.0	(null)	330.0	0.0	330.0	0.0	Not Available	No	(null)
12	211.0	0.0	211.0	0.0	(null)	330.0	0.0	330.0	0.0	Not Available	No	(null)
13	211.0	0.0	211.0	0.0	(null)	330.0	0.0	330.0	0.0	Not Available	No	(null)
14	211.0	0.0	211.0	0.0	(null)	330.0	0.0	330.0	0.0	Not Available	No	(null)
15	211.0	0.0	211.0	0.0	(null)	330.0	0.0	330.0	0.0	Not Available	No	(null)
16	211.0	0.0	211.0	0.0	(null)	330.0	0.0	330.0	0.0	Not Available	No	(null)
17	211.0	165.0	211.0	165.0	(null)	330.0	330.0	330.0	330.0	MustRun	No	(null)

Notification Time - This can override the daily scheduled, Hot, Cold, or Intermediate Notification Times
- Can only be changed during real-time operations

2/20/2014

Changing Fuel Schedules

- Units may be asked by PJM to stay on longer than their day-ahead schedule

- If this extended run forces the unit to procure fuel at a higher cost than their day-ahead offer, they may be reimbursed for these additional costs

- Unit owner must inform PJM which fuel cost schedule (#1-69,80-89) they will need to switch to in order to run the additional hours

  - If new schedule is *economic*, PJM operator will switch the unit to new schedule and log appropriately

  - If new schedule is *not economic*, PJM operator will release the unit and commit a different unit

Switching Schedules

If a unit has been asked to extend its hours of operation in real time and the unit has a limited fuel supply and must utilize higher priced fuel to remain online, the participant must inform the PJM system operator of the fuel cost change by requesting the real time offer to be switched to one of the additional available schedules

- Give PJM system operator the Schedule Name and Schedule Description from Schedule Manager Page

Unit	Schedules	Dispatch Lambda	Market Results	Regulation Market	Synchronized Reserve Market	Nonsynchronized Reserve Market	DA Scheduling Reserve Market	Con Ed	Parameter Limits	Interface Pricing	Opportunity Cost Calculator

Schedule Offers	Schedule Detail	Schedule Manager	Schedule Selection

Schedule Manager

Portfolio: [　　　　▼]　Unit: [　　　　▼]

Get Report

Get CSV Report

Pages: *1*　　　　　　　　　　　　　　　　　　Records: 1 - 3 of 3 matches.

Schedule Manager for

Add　Delete　Submit

☐	Schedule Name	Schedule Description	Schedule Type
☐	SGAS	Lucky Start CT SGAS	05-Cost-PLS
☐	CGAS	Lucky Start CT CGAS	06-Cost-PLS
☐	KERO	Lucky Start CT Kero	11-Cost-PLS

2/20/2014

PJM Procedure for Cost Reimbursement

Participants who have been asked by PJM to extend a unit's run time and in order to comply with that request procured higher cost fuel have until 12:00 noon on the following business day to submit an e-mail to **market_bids@pjm.com** with the following information:

- Unit Name
- Date of operation
- Time of extended operation
- ID number of new schedule
- Name of new Schedule
- Contact information (name of sender, phone, e-mail)
- Date and time of PJM Dispatch contact to generator
- Actual marginal cost of unit considering the actual cost of the fuel procured to continue operating