Introduction to Standby Rates

Public Utilities Commission of Ohio Workshop

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Sept. 13, 2012

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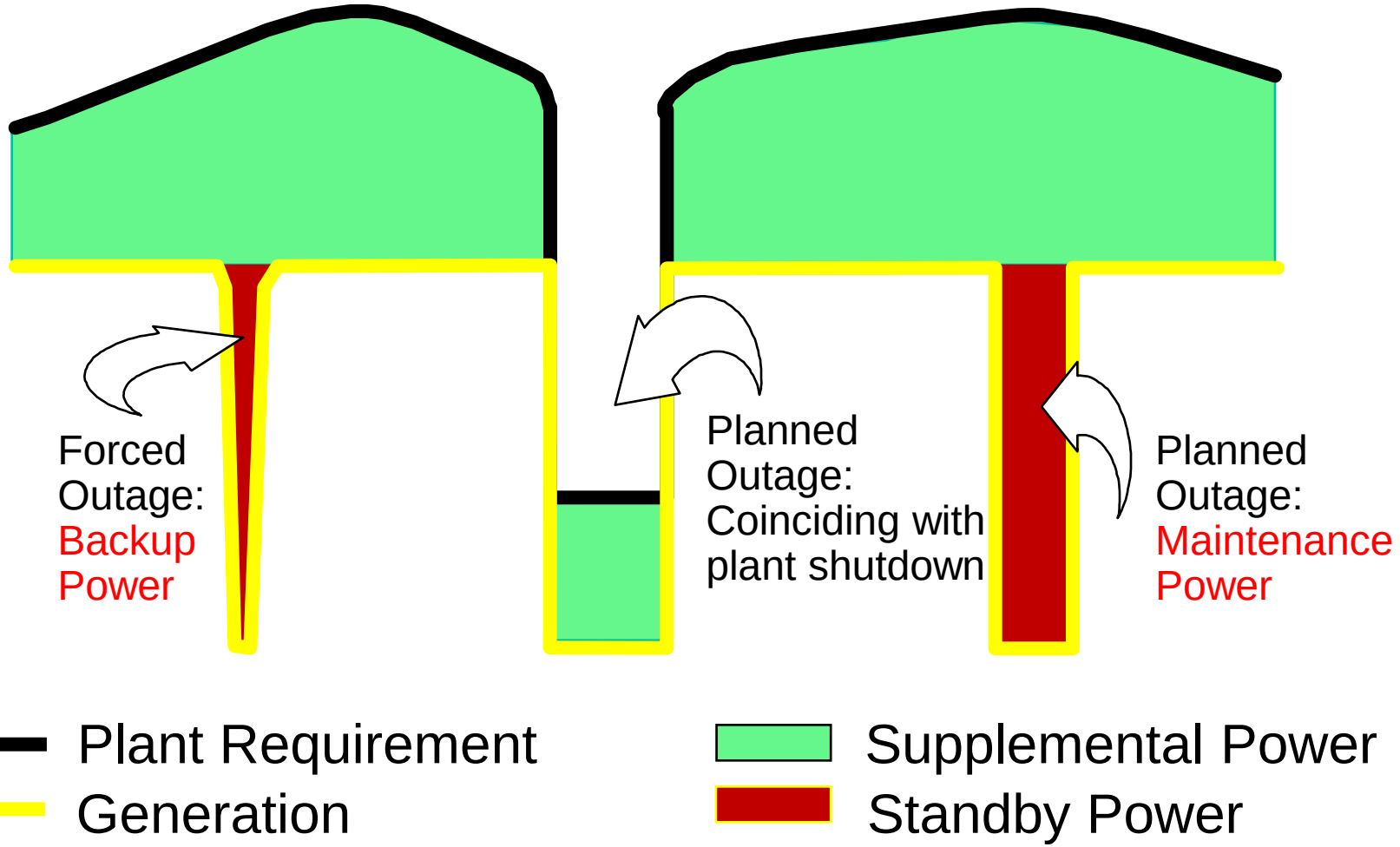
What Is Standby Service?

(also called Partial Requirements Service)

- A set of retail electric products for customers with on-site, non-emergency generation
  - *Backup power* during an unplanned generator outage
  - *Maintenance power* during scheduled generator service
  - *Economic replacement power* when it costs less than on-site generation
  - *Supplemental power* – additional electricity supply for customers whose on-site generation does not meet all of their needs
  - *Delivery* associated with these energy services

15 MW gas turbine generator set at Michigan State Univ., Solar Turbines Inc.

Illustration of a Self-Generator's Purchase Requirements



Courtesy of Brubaker & Associates

Traditional Utility Perspective

- Obligation to serve means standing ready to provide backup power when generator is not producing
- Utility maintains generation reserves and T&D facilities to do that, at a cost
- Failure to recover these costs from customer-generators results in a subsidy by other customers (or loss to utility)

Cost Causation for Standby Is Complex

- Coincident outages are likely drivers of standby costs, not sum of individual customers' generators
- Use of standby service may not coincide with peak demand of the utility facility providing the service
- Individual lines and feeders may have substantial excess capacity during coincident outages (so no incremental cost), *or* they may be fully utilized and facing upgrades in the near future (and this changes over time)
- Where delivery system is facing upgrades:
  - Distributed generation may allow deferrals, in which case benefits may *offset* costs
  - In some cases, these benefits may *exceed* costs
- Cost-causer principles may be difficult to follow
- Real net costs may be negligible, negative or unknown

Design Considerations for Standby Rates

- Customer's savings per kWh produced on-site compared to buying from the grid
- Reasonable balance between variable charges vs. contract demand or reservation charges
- Encouraging customer-generators to use electric service most efficiently and minimize costs they impose on the electric system
- Providing opportunities for customer-generators to avoid charges when they do not take service

14 MW biomass system, courtesy of MAN Diesel & Turbo North America, Inc.

- Load diversity - Generators won't all fail at the same time or during system peak
  - Shared T&D facilities are designed to meet demand by a pool of customers, not a single customer's needs
- Demand charges
  - Daily as-used demand charges for backup power
  - Recognize on-peak vs. off-peak demand
- Opportunities for customer-generators to buy backup power at market prices and avoid utility reservation charge for generation service
- Option for customer demand response to mitigate all or a portion of backup charges
- Option to self-supply reserves

RAP Standby Rates Project

- Evaluation of existing standby tariffs and improvements for consideration
  - Economic modeling
  - Technical assistance
- Five public utility commissions participating: OH, AR, UT, CO, NJ
- Consulting services by Brubaker & Associates
- Funded by ORNL/USDOE
- USDOE will publish report with results

Standby Rates Analysis – Midwest Clean Energy Applications Center

- Midwest CEAC, sponsored by USDOE, is analyzing potential barriers under existing standby rates for the three Ohio investor-owned utilities
- Paper to be published 4th quarter 2012
- Preliminary results show:
  - Ratchets ranging from 60% to 85% of peak summer demand
  - Ratchets that include off-peak demand
  - Relatively high standby demand costs (instances up to $6/kW)
  - Few options to avoid standby costs through load removal, physical assurance or self-supplied reserves
- Contact Cliff Haefke (312-355-3476, chaefk1@uic.edu) or Graeme Miller (312-996-3711, gmille7@uic.edu)

For More Information

- *Standby Rates for Customer-Sited Resources: Issues, Considerations and the Elements of Model Tariffs*, prepared by Regulatory Assistance Project and ICF International for U.S. EPA, December 2009, http://www.epa.gov/chp/documents/standby_rates.pdf
- *Rate Structures for Customers With Onsite Generation: Practice and Innovation*, prepared by Synapse Energy Economics and Regulatory Assistance Project for National Renewable Energy Laboratory, December 2005, http://www.synapse-energy.com/Downloads/SynapseReport.2005-12.NREL.Rate-Structures-for-Customers-with-Onsite-Generation.04-39.pdf
- Wayne Shirley, Regulatory Assistance Project, *Distribution System Cost Methodologies for Distributed Generation*, 2001, www.raponline.org/docs/RAP_Shirley_DistributionCostMethodologiesforDistributedGeneration_2001_09.pdf
- State Policy Resources for combined heat and power: http://www.epa.gov/chp/state-policy/index.html

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power and natural gas sectors. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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