



# The National Regulatory Research Institute



# The Impact of Price Caps and Rate Freezes on Service Quality

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# The Experience in Telecommunications

- ◆ Concerns about electric utility reliability and quality of service are tied, in large part, to the initial bad experience with telephone quality of service under price cap regulation.
- ◆ See Clements, Michael E. (2001). Local telephone quality-of-service: A framework and empirical results.

# State Regulators Generalize

- ◆ Given the experience of state regulators in telecommunications, some state regulators considering industry restructuring of the electric utility industry that involved retail access and either price caps or rate freezes were concerned about outage rates

# The Incentive Under Price Caps and Rate Freezes

- ◆ Without resorting to mathematical formulae, the direction of the incentive for a utility under price caps and rate freezes is to cut costs, especially operation and maintenance costs.
- ◆ Cutting operation and maintenance costs on distribution and transmission systems could result in increased outage rates

# The Incentive Under Price Caps and Rate freezes

- ◆ Some utilities have undertaken a new maintenance practice called predictive maintenance
- ◆ Predictive maintenance varies from more traditional “scheduled” maintenance
- ◆ In scheduled maintenance, elements of the transmission and distribution system are periodically replaced to avoid outage

# The Incentive Under Price Cap and Rate Freezes

- ◆ Under predictive maintenance, elements of the transmission or distribution system are replaced based on algorithms that predict when failure will occur. Maintenance is then done just in time.
- ◆ The idea of predictive maintenance is to minimize overall operation and maintenance costs, which is consistent with the incentive under price caps and rate freezes

# The Underlying Problem

- ◆ The underlying problem though is that minimizing costs, in this case, the cost of operation and maintenance does not lead to an economically efficient result
- ◆ The incentives are flawed
- ◆ The problem is that for many (if not most) customers the value of lost power is higher than the cost of avoiding the outage.

# Some State Regulators React

- ◆ Some state commissions decided to react by attempting to assure retail customer reliability
- ◆ It is the part of the obligation to serve (to provide safe and reliable service) the survives retail access
- ◆ Another concern of state commissions is that there is no wholesale obligation to serve

# State Commissions React

- ◆ This information is based on a 2001 survey that the NRRI is now updating. Click on the NRRI Web Site at [www.nrri.ohio-state.edu](http://www.nrri.ohio-state.edu)
- ◆ Forty state commissions answered the survey
- ◆ Most state commissions (N=23) rely on reporting and monitoring to assure reliability and service quality

# State Commissions React – cont.

- ◆ Many states (N=13) have gone also put in place objective performance standards
- ◆ Several of these states (N=7) also have penalties for failing to meet the objective standards.

# State Commission React – cont.

- ◆ An Alphabet Soup of Outage Performance Standards
- ◆ CAIDI (N=14)
- ◆ CAIFI (N=1)
- ◆ SAIDI (N=21)
- ◆ SAIFI (N=22)
- ◆ MAIFI (N=9)

# State Commissions React – cont.

- ◆ Several states (N=10) address tree-trimming (or vegetation management) programs. Two had penalties for failure to comply.
- ◆ Several states (N=10) address poorly performing circuits. Two had penalties for failure to make improvements.

# How Effective Is State Regulation?

- ◆ Are the penalties large enough to matter?
- ◆ Do the penalties reflect the value of service to the customer. What is the value of an outage to the customer? What is the cost of outage avoidance?
- ◆ Until those questions are answered, performance-based regulation is a rough tool with which to offset perverse incentives created by rate caps or rate freezes

# How Effective Is State Regulation?

– cont.

- ◆ Knowing the value of reliability will allow state commissions to differentiate the quality of service for customers who value reliability highly.
- ◆ It will provide a roadmap for transmission and distribution upgrades and enhancements as well as influence operation and maintenance practices

# How Effective Is State Regulation?

– cont.

- ◆ State regulation is focused on delivering power to the end use customer, hence, the focus on outage rates
- ◆ Mandatory NERC Reliability Rules as proposed in the Energy Bill are needed yesterday (sans the \$23 billion in tax cuts and subsidies)

# How Effective Is State Regulation? – cont.

- ◆ Wholesale competition exists, regardless of state policies on retail access. State commissions must react appropriately to assure reliability to the end use customer without burdening the wholesale market
- ◆ Participant funding at wholesale with beneficiaries paying. To what extent are the beneficiaries local end use customers?

# Reliability Costs Money

- ◆ Ultimately, with the correct data, state regulators might find that the value of reliability so exceeds the cost of avoiding outages that there is a need for increased investment and more operation and maintenance, not less
- ◆ Regulators need data to set the incentives correctly. Regulators need data before making decisions that will help raise T&D rates
- ◆ Rates will reflect customers' differentiated value of reliability