Gas Pipeline Ratemaking

Brief Introduction to Cost Allocation and Rate Design Methodologies and the Issue of Mileaging
Past and Present

- Congress passes the Natural Gas Act (NGA) in 1938
  - Rates must be “just and reasonable”

- Cost-of-Service ratemaking is a starting point for determining “just and reasonable” rates - Hope Decision

- Today – 18 CFR Section 284.10 (3)(ii) Rates – requires rates to reasonably reflect any material variation in the cost of providing service due to: the distance over which the transportation is provided.
Interstate Pipelines Develop

- First Pipelines were regional such as: Hope, East Ohio, (Consolidated) and United – 1890’s to 1910’s

- Decades that follow - long distance pipelines constructed from Supply Areas (Appalachia, Anadarko, Hugoton, Gulf Coast) to Destination/Consumption Markets (Upper Midwest, Northeast and California)

- New long line pipelines generally utilized System-Wide (Postage) Average Rates
Interstate Pipelines Develop Zones As Load Develops Along Pipeline Route

- Pipelines expand through looping and additional compression. Add new customers along route of pipeline.
- New customers only want to pay rates for their share (facilities utilized) of the pipeline.
- Zone rates are developed in numerous complex rate case proceedings from 1940’s through 1990’s.
- Tennessee Opinion No. 352 -finest example of Commission Order writing on rate design (27 F.P.C. 202; 1962)
Rate Design

- Postage Stamp Rate Design
- Distance Based Rate Design
- Seasonal Rate Design
Distance-Based Rate Design

- Distance-based rates reflect the fact that costs increase as you transport gas over longer distances.

- Customers further away from the receipt point pay higher rates.

- Methods used to derive distance-based rates:
  1) Strict Mileage-based rates
  2) Zoned Rates
  3) Zone Matrix
  4) Zone Gate
Mileage-Based Rates

- A rate per mile of haul, or per increment (ex: 100 miles) of haul is calculated

- Customer’s bill = rate per mile \* number of miles \* reservation or contract demand level
Zoned Rates

- The pipeline is divided into geographic zones
- Within a given zone, costs are uniform
- Costs are allocated to each zone using the ratio: $\frac{\text{Dth-Miles in specific zone}}{\text{Total of all zones’ Dth-Miles}}$
Zone Matrix

- A variation of the zoned rate approach
- Establishes a matrix that weighs all receipts into, and all deliveries out of, a zone
- Relative factors are derived from these weights
Zone Gate

• Another variation of the zoned rate approach

• Costs of service directly assigned to each zone

• Contract demand calculated for each zone

• Rates are additive (transaction from Zone 1 to Zone 3 would pay the sum of rates for Zone 1 + Zone 2 + Zone 3)
Mileaged-Based Transportation Rates – Developing Issues

- Feb 2012 futures (NYMEX) down to $2.77 MMBtu

- Spot price basis differentials between Henry Hub and Chicago (14 cents) New York (36 cents) 01/11/12 – do not support cost of pipeline transportation

Developing Issues Continued

- Traditional pipeline destination markets are no longer captive markets

- Large number of good, competitive, low-cost alternatives - do not allow for recovery of traditional mileage-based zone rates in historic destination markets

- Increases in Marcellus and other Shale Production has the potential to strand significant quantities of traditional interstate pipeline capacity
Figure 3. U.S. natural gas supply, 1990-2035 (trillion cubic feet)

- History
- Projections

- Alaska
- Shale gas
- Coalbed methane
- Non-associated onshore
- Non-associated offshore
- Associated (with oil)
- Net imports
EIA Annual Energy Outlook 2012-Early Release Forecast – What Are Implications?

Figure 2. U.S. natural gas production, 1990-2035
(trillion cubic feet)

- History
- 2010
- Projections

- Shale gas: 49%
- Tight gas: 21%
- Non-associated offshore: 9%
- Coalbed methane: 7%
- Associated with oil: 7%
- Non-associated onshore: 7%

- Alaska: 2%
2007 Basis (pre-shale boom) to Henry Hub

- $2.88
- $0.34
- $1.53
- $6.94
In 2011, basis to Henry Hub has diminished due to shale supply boom.