Lost-and-Unaccounted-for Gas: State Utility Commission Practices

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Topics

• Definition of lost and unaccounted-for (LAUF) gas
• Regulatory concerns and questions
• Current regulatory practices (NRRI survey)
• Regulatory options to manage LAUF gas
• Considerations for state utility commissions
Gas Flows from Receipts to Deliveries

Receipts – (LAUF Gas + Adjustments) = Deliveries,

or

LAUF Gas = (Receipts – Deliveries) – Adjustments

LAUF\% = LAUF Gas/Receipts
<table>
<thead>
<tr>
<th>Source</th>
<th>Problem</th>
<th>Mitigative Action</th>
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</table>
| Pipe leaks            | ▪ High levels or dramatic change in LAUF gas might indicate a safety threat | ▪ Continuous monitoring of leaks  
▪ Detailed leak surveys  
▪ Repair or replace at-risk pipes in a timely fashion |
| Measurement error     | ▪ Inaccurate gas volumes at customer meters                              | ▪ Testing and calibration of meter accuracy  
▪ Replacement or maintenance of malfunctioning meters  
▪ Installation of automated meter-reading devices to compensate for temperature and pressure differences |
| Temperature and pressure difference  
Heat value conversion  
Meter inaccuracies |                                                                                |                                                                                  |
| Accounting error      | ▪ Inaccurate calculations and misinterpretation of meter data  
▪ Improper accounting for gas receipts and deliveries                    | ▪ Periodic internal audits  
▪ Proper staff training  
▪ Well defined standard practices |
| Third party damage    | ▪ All customers paying for gas losses and repairs  
▪ Safety threat leading to incidents                                     | ▪ Proactive program that informs the public of the dangers of digging and calling 811 before digging  
▪ Strict penalties (usually imposed by a state agency) for the guilty party  
▪ Charges to the guilty party for gas losses and repairs                |
| Cycle billing         | ▪ Timing mismatch between gas receipts and deliveries                    | ▪ More frequent meter reads (e.g., monthly)  
▪ Less accounting lag                                                      |
| Stolen gas            | ▪ All customers subsidizing delinquent customers  
▪ Safety threat for local community                                        | ▪ Inspection of meters for signs of tampering  
▪ Follow-up investigation  
▪ Strict penalties for delinquent customers                                |
| “Blowdown”            | ▪ Released gas into the atmosphere during maintenance, inspections or emergency procedures | ▪ Inject “blowdown” gas into low-pressure mains by adding piping from compressors to the mains |
Regulatory Concerns

- **The incentive problem**
  - One concern is weak incentives for utilities to manage LAUF gas
  - Typically a marginal area of review by commissions

- **Higher purchased gas costs for customers**
  - Commissions typically consider LAUF-gas costs as part of a utility’s cost of service
  - Commissions typically evaluate the prudence of utility actions or non-actions in determining whether customers should pay for those costs

- **Safety concerns from excessive pipe leaks**
  - Gas leaks typically do not pose a safety threat
  - Commissions have particular concerns over upward trends in LAUF gas, since they might “red flag” a pipeline safety threat
  - Other factors may account for this trend, but it is hard for a utility to know if the problem is gas leakage, an increase in measurement error or something else
Major Challenges for Commissions

- **Definition**
  - No single definition of LAUF gas across utilities, even those located in the same state

- **Measurement**
  - Little empirical evidence on the effects of individual factors on LAUF gas

- **Multiple Causes**
  - Several causes accounting for LAUF gas

- **Annual Variability**
  - High year-to-year variability for some utilities
Major Challenges for Commissions continued

- **Unique Determinants**
  - Large differences in LAUF gas, as a percentage of sendout, across utilities

- **Degree of Control**
  - Some factors of LAUF gas within the control of a utility, others are not

- **Recognition of Patterns**
  - Difficulty in forecasting LAUF gas for an individual utility, as year-to-year levels can fluctuate widely
NRRI sent out 14 survey questions to state utility commissions in mid-January 2013 inquiring into their policies and practices on LAUF gas.

The questions covered:
- The incentive they give utilities to manage their LAUF gas
- The importance they place on LAUF gas
- Their perceptions on the effectiveness of utilities in managing LAUF gas, and
- How they evaluate LAUF-gas levels and what criteria they apply
Current Regulatory Practices  

- NRRI received responses from 41 states
- Commissions vary widely in their vigilance toward monitoring LAUF gas:
  - Some commissions devote little effort to reviewing LAUF gas; they allow recovery of their costs with minimal oversight
  - Other commissions place a cap on allowed cost recovery or apply an explicit incentive mechanism
  - A third group of commissions routinely scrutinizes levels of LAUF gas to determine cost recovery or to identify any potential safety or other problems; these commissions tend to act when levels of LAUF-gas are abnormal or deviate far from historical averages
Current Regulatory Practices  

• **Highlights of responses**
  
  ▪ Commissions normally review LAUF gas as part of an audit of a utility’s gas purchasing practices, either in a rate case review or PGA reconciliation
  
  ▪ Several commissions expressed concerns when LAUF gas dramatically increases from one year to another
  
  ▪ A strong incentive for utilities to manage LAUF in most instances appears to lie with the increased likelihood of a pipeline incident if they ineffectively repair or eliminate leaks
  
  ▪ Almost all state commissions allow the recovery of LAUF-gas costs in a PGA mechanism

  ▪ Many gas utilities have recently embarked on accelerated pipeline replacement programs that should lower the amount of LAUF gas in the future
  
  ▪ While the vast majority of survey respondents expect utilities to well manage their LAUF gas, few have an opinion as to whether utilities could do a better job
  
  ▪ Utilities generally do not break down LAUF gas by source, at least in quantitative form
<table>
<thead>
<tr>
<th>State/Utility</th>
<th>Practices</th>
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<tbody>
<tr>
<td>Chesapeake Utilities</td>
<td>▪ Unaccounted for Gas Incentive Mechanism, whose purpose is to reduce LAUF gas below a predetermined benchmark</td>
</tr>
<tr>
<td>Atlanta Gas Light</td>
<td>▪ Minimum LAUF-gas standard of 1.41% to 1.81% for the 16-year rolling average</td>
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| Idaho              | ▪ Temporary commission cap on LAUF gas because of abnormal increase in LAUF gas  
                     ▪ Periodic utility reporting on improvements in LAUF-gas performance |
| Indiana            | ▪ NIPSCO: Cap at 1.04% with all LAUF-gas costs recovered in the PGA mechanism  
                     ▪ Vectren: Change in the recovery of LAUF-gas costs from base rates to the PGA mechanism, in addition to capping cost recovery at LAUF-gas percentage of 0.8% |
| Michigan           | ▪ All of LAUF-gas costs recovered in the base rate                          |
| New York           | ▪ White paper on LAUF gas                                                
                     ▪ Targeted incentive mechanism                                           |
| Ohio               | ▪ The commission can disallow a portion of the costs if LAUF gas exceeds 5%, pursuant to the Ohio Administrative Code |
| Oklahoma           | ▪ Each utility has a Safe Harbor provision limiting the percentage of LAUF gas recoverable from customers through the PGA mechanism; LAUF gas above the allowed levels triggers a review  
                     ▪ Performance Based mechanism for LAUF-gas                                |
| Pennsylvania       | ▪ Commission rule on uniform definition of LAUF gas and more stringent LAUF-gas targets over time |
| Texas              | ▪ 5% cap on LAUF gas with exceptions                                      |
Regulatory Options to Manage LAUF Gas

- Guiding principles on performance measurement and evaluation
  - Two distinct factors (management efforts, outside factors)
  - Different applications of performance measures
  - *Ex post* and *ex ante* performance measures
  - Standard for performance

- **Benchmarking**
  - Addressing information asymmetry
  - Criteria for benchmarking a specific utility function
Six Observations on Benchmarking

- A benchmark can establish a point of reference for measuring and judging the performance of an individual utility.
- Benchmarking is generally best applied in “red flagging” potential problems and as a supplemental source of information in determining a utility’s performance.
- A lax benchmark for a utility can have a perverse effect.
- An overly stringent benchmark can unfairly penalize a utility for prudent behavior.
- Benchmarking quantifies past performance and establishes a baseline for gauging improvements and making comparisons across utilities.
- The nature of LAUF gas makes it difficult to allow for setting a cap that is compatible with well-accepted industry practices.
Regulatory Options

continued

• Regulatory tools
  ✅ Monitoring
    • Utility reports to the commission, who reviews the information and takes appropriate action
  ✅ Target setting
    • Commission sets a standard that triggers (a) further investigation, (b) a utility explanation or (c) a direct penalty
  ✅ Incentive mechanism
    • Commission rewards or penalizes a utility based on actual performance relative to a prespecified benchmark
A Multi-Step Regulatory Review

- Recognition of regulatory influence on utility performance
- Cursory performance assessment
- Post-review action
- The end result of accountable regulation
Regulatory Benchmarking, Monitoring and Action

Public utility statutes and regulatory rules

Utility incentives and constraints

Management behavior

Exogenous factors

Actual utility performance

Performance expectation

Monitoring

Performance evaluation

Utility response

Regulatory review

Regulatory action

Additional incentives

Detailed investigation

Cost-recovery decision
Considerations for Commissions

- Comparing LAUF percentages across utilities at a given point in time for determining cost recovery and utility prudence could lead to inappropriate action.
- The best benchmark arguably comes from tracking an individual utility’s LAUF percentage over time.
- Utilities can influence LAUF-gas levels in different ways.
- Commissions might consider taking a proactive stance in assessing the performance of utilities in managing LAUF gas, especially in making sure that utilities are exploiting all prudent actions to manage LAUF gas.
Considerations for Commissions

Continued

- Commissions should consider requiring utilities to compile better information on the individual sources of LAUF gas
- Commissions should exercise caution in executing an incentive mechanism for LAUF gas
- An effective commission tool is to monitor and assess utilities’ LAUF-gas levels
• Presentation adapted from Ken Costello, *Lost and Unaccounted-for Gas: Practices of State Utility Commissions*, NRRI-13-06, June 2013