INTRODUCTION TO LUAF

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What is LUAF?

**Summary**

\[
\text{LUAF} \% = \frac{\text{Measured Gas Receipts} - \text{Total Delivered Gas}}{\text{Total Delivered Gas}}
\]

**AGA**

“The difference between the total gas available from all sources and the total gas accounted for as sales, net interchange, and company-use. This difference includes leakage or other actual losses; discrepancies due to meter inaccuracies, variations of the temperature and/or pressure; and other variants, particularly billing lag.”

**PHMSA**

- Unaccounted for gas is gas lost; that is, gas that the operator cannot account for as usage or through appropriate adjustment. Adjustments are appropriately made for such factors as variations in temperature, pressure, meter-reading cycles, or heat content; calculable losses from construction, purging, line breaks, etc., where specific data are available to allow reasonable calculation or estimate; or other similar factors.
LUAF Components

**Emissions**
- Blowdowns (Less than 10 MCF)
- Component Emissions
- Damages from Geohazards
- Meterset Leaks
- Odorizers
- Pipeline Leaks

**Non-Emissions**
- Accounting
- Measurement
- Theft
- Non-Study Components
Why Should we Stop Talking About LUAF?

Annual Emissions Report
- Storage System Leakage
- Excavation Damages
- Other Outside Forces Damage
- Blowdowns Emissions
- Compressor Emissions

LUAF
- Accounting Adjustment
- Measurement Error
- Theft/Diversion
- Non-study Components

- Trans. & Dist & Leakage
- Some Damages
- Blowdown
- Equipment Vented Emissions
Historical LUAF Analysis at SoCalGas and SDG&E

1991
- Study conducted to analyze UAF components
- Revealed significant shift in relative size of contributions
- Demonstrated only 8% of UAF was due to leakage

2006
- Addendum to update 1991 study for both SoCalGas and SDG&E
- Key data change included ultrasonic meters used to serve large customers
- Components attributed to core and noncore customer classes

2017
- SoCalGas and SDG&E began reporting emissions in Annual Emissions Report
- Emission reporting is based on emissions factors from national sources, not specific utility studies
- For consistent reporting between Emissions Report and G.O. 112F, contributions to LUAF were adjusted from historical studies
- Emissions are now accounted for, do they belong in UAF?
Reporting variations

- EIA 176
- FERC Form 2
  - Varying reporting periods
- PHMSA 7100-1
- TCAP
  - Inconsistent terminology and definitions
- WACOG
  - Varying components are included
- SB-1371 Annual Report
- CEC 1308
- Gas Theft
- GO 112F
  - Differences in calculation methodology
- California Gas Report
- DJSJ Gas Leakage Annual Survey

Timing causes variations due to accounting lag.

Inconsistent terminology and definitions.

Differences in calculation methodology.
2017 LUAF Component Breakdown

SoCalGas LUAF Components

- Measurement error: 60%
- Leakage: 17%
- Non-Study Components: 10%
- Theft: 8%
- Accounting: 5%

SDG&E LUAF Components

- Measurement error: 64%
- Leakage: 14%
- Non-Study Components: 13%
- Theft: 5%
- Accounting: 4%