Updating SB 1371 Emission Factors

Agenda

• Background
• Residential Gas Customer Meters Study (MSAs)
• Distribution Main & Service Pipelines Study (DM&S)
• Next Steps
• Q & A
Background

- Almost all EFs in SB 1371 were based on the 1996 US EPA/GRI study
- CARB has funded two studies to update California specific EFs
- The studies focused on EFs with significant emission impacts
- Utilities can continue and improve on CARB’s efforts
2017 Emissions Grouped by Source Classification
(MMscf and % of Total)

- Population Based Emissions (MMscf) 3,926 61%
- Graded Pipeline Leaks (MMscf) 1,207 19%
- Blowdowns (MMscf) 635 10%
- Vented (MMscf) 242 4%
- All Damages (MMscf) 227 4%
- Other Leaks (MMscf) 79 1%
- Unusual Large Leaks (MMscf) 83 1%
- Other Leaks (MMscf) 79 1%
- All Damages (MMscf) 227 4%
- Blowdowns (MMscf) 635 10%
- Vented (MMscf) 242 4%
- Population Based Emissions (MMscf) 3,926 61%
MSAs Study

- CARB funded GTI ($125 K)
- The objectives:
  - Update California-specific EF
  - Determine average MSA leak rate
  - Test hypothesis: inland vs. coastal MSAs
  - Identify leak prone components
- Collected 500 MSAs random samples:
  - 200 MSAs each from SoCal Gas and PG&E
  - 100 MSAs from SDG&E
- Shared data with individual utility
Coastal Service Territory

<table>
<thead>
<tr>
<th>Company</th>
<th>Percent of Coastal MSAs</th>
<th>Target Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E</td>
<td>21%</td>
<td>42</td>
</tr>
<tr>
<td>SoCal Gas</td>
<td>2.4%</td>
<td>5</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td>11%</td>
<td>11</td>
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</tbody>
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Leak Measurements

• Quantified NG leaked into the atmosphere:
  ✓ Detecting methane leaks:
    ▪ CGI Devise (Sensit G2 Gold)
    ▪ Soap bubbles
  ✓ Measuring methane leak flow rates:
    ▪ Hi-Flow Sampler (Bacharach, Inc., PA)
    ▪ Methane Analyzer (Los Gatos Research, CA)

• Excluding NG purge from the regulators
Handheld CGI Device
Soap Bubbles Test
Hi-Flow Sampler & Methane Analyzer
Quantifying Methane Leaks
The Report Status

- GTI submitted a draft report
- The study met the objectives
- CARB provided comments
DM&S Pipeline Study

• CARB funded GTI ($250 K, completed 2016)
• The objectives:
  ✓ Update California-specific EFs:
    ▪ Unprotected Steels (Mains & Services)
    ▪ Plastics (Mains & Services)
  ✓ Correlate below- & above-ground leak measurements
• Leak Measurements:
  ✓ Flow Meter (below-ground);
  ✓ Hi-Flow Sampler (above-ground)
• Samples Size:
  ✓ Total 78 samples, mostly above-ground measurements
Pipeline Data Confirmation

- Pipeline data in the report did not match those from the utility’s repair records.
- Utilities discovered the discrepancies when repairing the leaks.
- All leaks in the samples were completely repaired this year.
- No leak re-measurements were attempted.
Several Type of Data Discrepancies

- There are several type of data discrepancies:
  - Pipeline material type
  - Pipeline function
  - Number of leaks
- Discrepancy rates vary by utilities, ranging from 25% to 50%
- CARB requested utilities to provide the repair logs for the changes
Next Steps

• MSAs Study:
  ✓ Await GTI’s revision
  ✓ Finalize CARB’s internal review process
  ✓ Provide stakeholders to comment before releasing to the public

• DM&S Pipeline Study:
  ✓ Prepared a new contract with GTI ($20 K)
  ✓ Revise the report with the new data

• New EFs from both studies may not be ready for the 2018 annual emission reports
Q & A Session

Any questions?