CH4 Connections
What’s Going on Underground?

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Operating Supervisor, Con Edison
Agenda

- Con Edison Gas System Overview
- Leak Detection
- Leak Response Time
- Gas Leak Backlog Management
- Leak Pinpointing
- So What’s Going on Underground?
- Type 3 Example
- Type 1 Example
- Follow Up
Con Edison System Overview

• System
  – ~ 4300 mi – Distribution
  – ~ 100 mi - Transmission

• System Materials:
  – Cast Iron (~24%)
  – Steel (~30%)
    • Unprotected (~22%)
    • Protected (~8%)
  – Wrought Iron (Less than 1%)
  – Plastic (~46%)

• 1.1 Million Customers
Leak Detection
How we Receive leaks

• Leak Survey
  – Monthly Survey
  – Company/Contractor
  – Heath Detecto-Pak Infrared (DP-IR)
  – Picarro
  – ABB MobileGuard

• Natural Gas Detector

• Public
Leak Detection
How we Receive leaks

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• Public
Leak Detection (cont.)
Public Awareness Campaigns

Don’t assume someone else will make the call.


Gas leaks can create fires and explosions.

Learn More
Leak Detection (cont.)

Incoming Leak Source

- Public: 63%
- Company: 37%
Leak Response Time

- 30 min response
- # calls
Gas Leak Backlog Management

![Graph showing the decline in leaks from 1992 to 2018](image-url)
### Gas Leak Backlog Management (cont.)

**Average time to Repair**

#### System Averages

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Gas Leak Backlog Management (cont.)
Multi-Faceted Approach

**Prevention**
- Efforts:
  - Main replacement program leak prone pipe
  - One-call, Dig safe
  - Training
  - Work coordination with city utilities

**Detection**
- Efforts:
  - *Monthly* mobile leak survey
  - Public awareness campaigns
  - Residential methane detectors development and deployment

**Response**
- Efforts:
  - Code MuRRE
  - Make safe
  - Isolation valve installation program
  - Repair Type 3 leaks
Leak Pinpointing
Factors to consider to determine leak source

- Road Conditions
  - Road Composition
  - Soil Type & Moisture
  - Existing Utilities/Crossings
  - Grade
  - Unique Features
  - Vegetation

- Pipe
  - Material
  - Existing Repairs
  - Pressure
  - Cover
  - Odor

- Weather
  - Frost
So What’s Going on Underground?  
Wall St and William St
So What’s Going on Underground? (cont.)
Wall St and William St
Type 3 Example
Type 3 Example
Type 3 Example (cont.)

~62'
28%
Type 3 Example (cont.)
Type 3 Example (cont.)

- **Main:**
  - 10" HPST 1971

- **Road Makeup:**
  - Asphalt
  - Concrete
  - Earth
Type 3 Example (cont.)

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- **Main:**
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- **Road Makeup:**
  - Asphalt
  - Concrete
  - Earth

- **Reason for Leak:**
  - Corrosion

- **Repair:**
  - Fullseal Clamp
Manhole 11%
TYPE 1 Example
Type 1 Example (cont.)

Potable Water

Manhole 11%  Sewer

Natural Gas

Potable Water
Type 1 Example (cont.)
Type 1 Example (cont.)

Sustained ~60's
Type 1 Example (cont.)

• Main:
  – 16” MPCI 1917

• Road Makeup:
  – Asphalt
  – Concrete
  – Earth/Rock

• Reason for Leak:
  – Bell & Spigot Joint

• Repair:
  – Encapsulation
Type 1 Example (cont.)

Readings Clear

Potable Water

Natural Gas

Sewer
Type 1 Example (cont.)

Sustained Readings
Type 1 Example (cont.)

• Main:
  – 6” LPCI 1904
    • 1” Steel Riser

• Road Makeup:
  – Asphalt
  – Concrete
  – Earth/Rock

• Reason for Leak:
  – Corrosion on Riser

• Repair:
  – Replace Riser
Type 1 Example (cont.)
Follow Up

• Type 1, 2A/M, 2’s require a recheck of test points
• After 14 days within 30
• GDS does the recheck