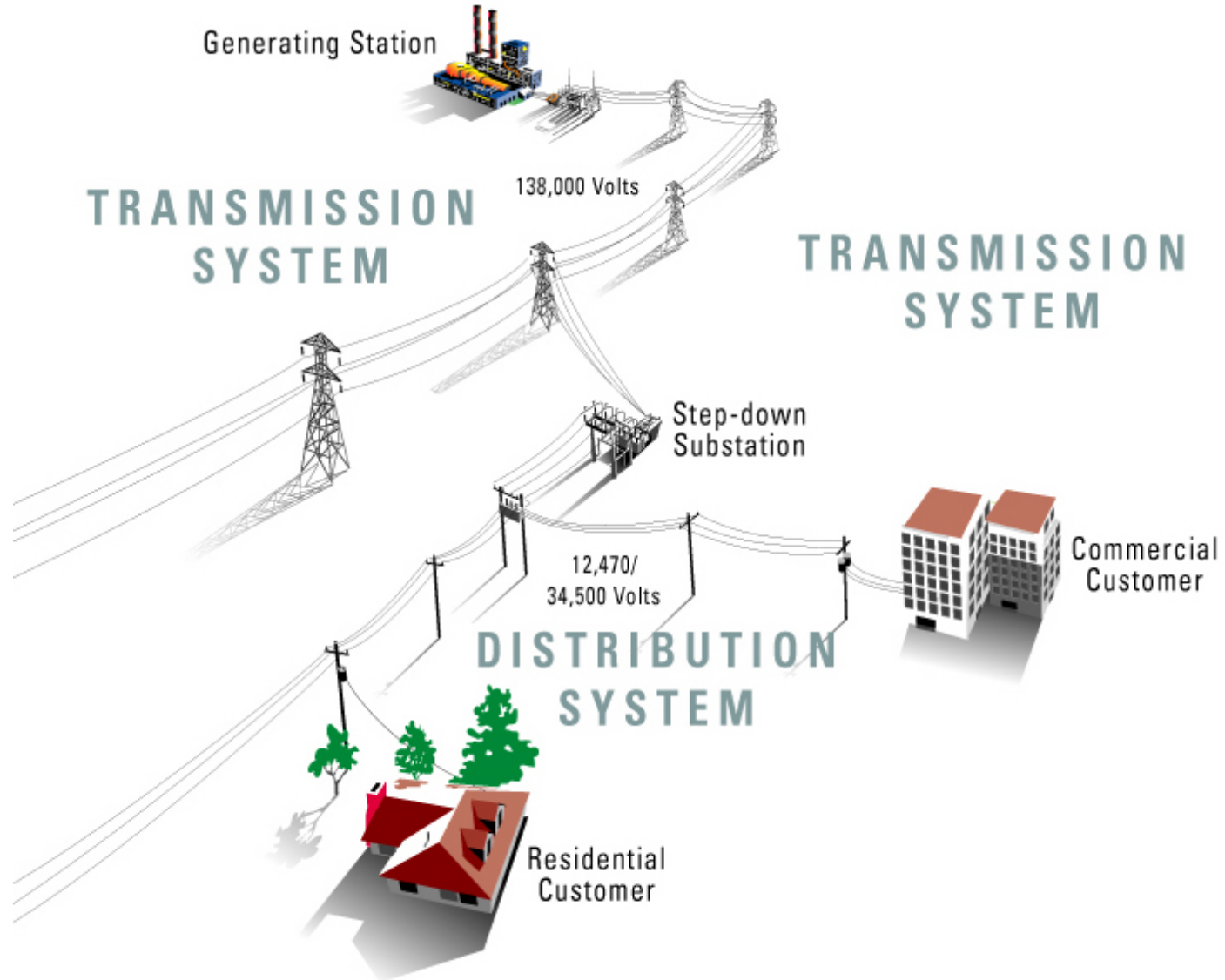


## **Electric – Gas Reliability Workshop**

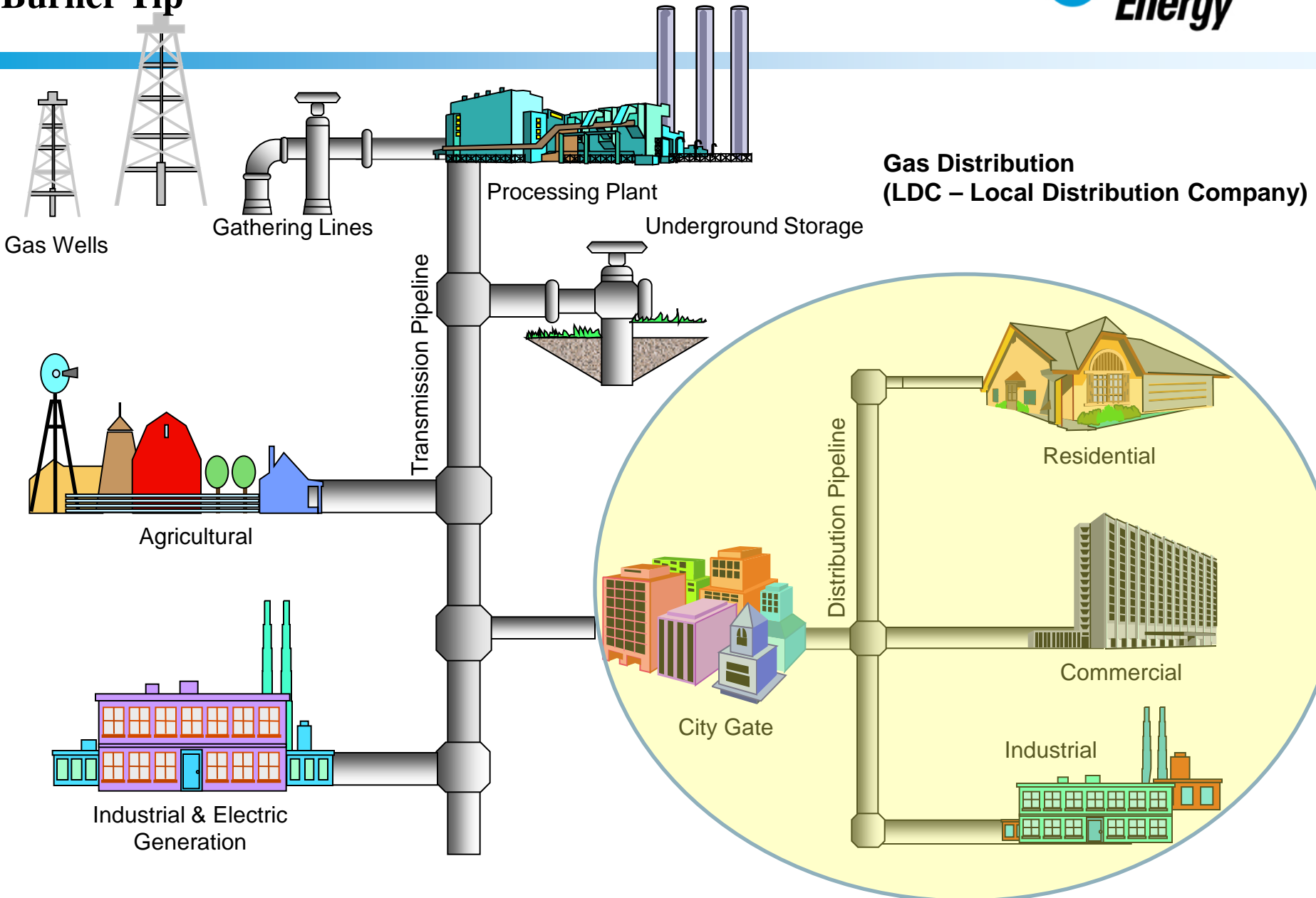
April 2012



- New Mexico Gas Company lost approximately 30,000 customers in February 2011
- Customers were without natural gas for several days before service could be restored
- Lessons learned:
  - Mutual Assistance plan in place and ready for execution
  - Improved communication with community including customers, regulators, media and natural gas suppliers



# Natural Gas Distribution Systems - From Wellhead to Burner Tip



# Gas and Electric Delivery System Similarities



<b>Gas Distribution System</b>	<b>Electric Transmission &amp; Distribution System</b>
Transmission Pipeline (200 psi and greater for example)	Transmission (138 kV and greater for example)
City Gate Station (Custody Transfer/Measurement Point)	Substation
Distribution Regulator Station	Step Down Transformer
Distribution Main < 60 psi	Circuit, Feeder
Service Line	Customer Drop
Meter	Meter

# Firm Service vs. Interruptible Service



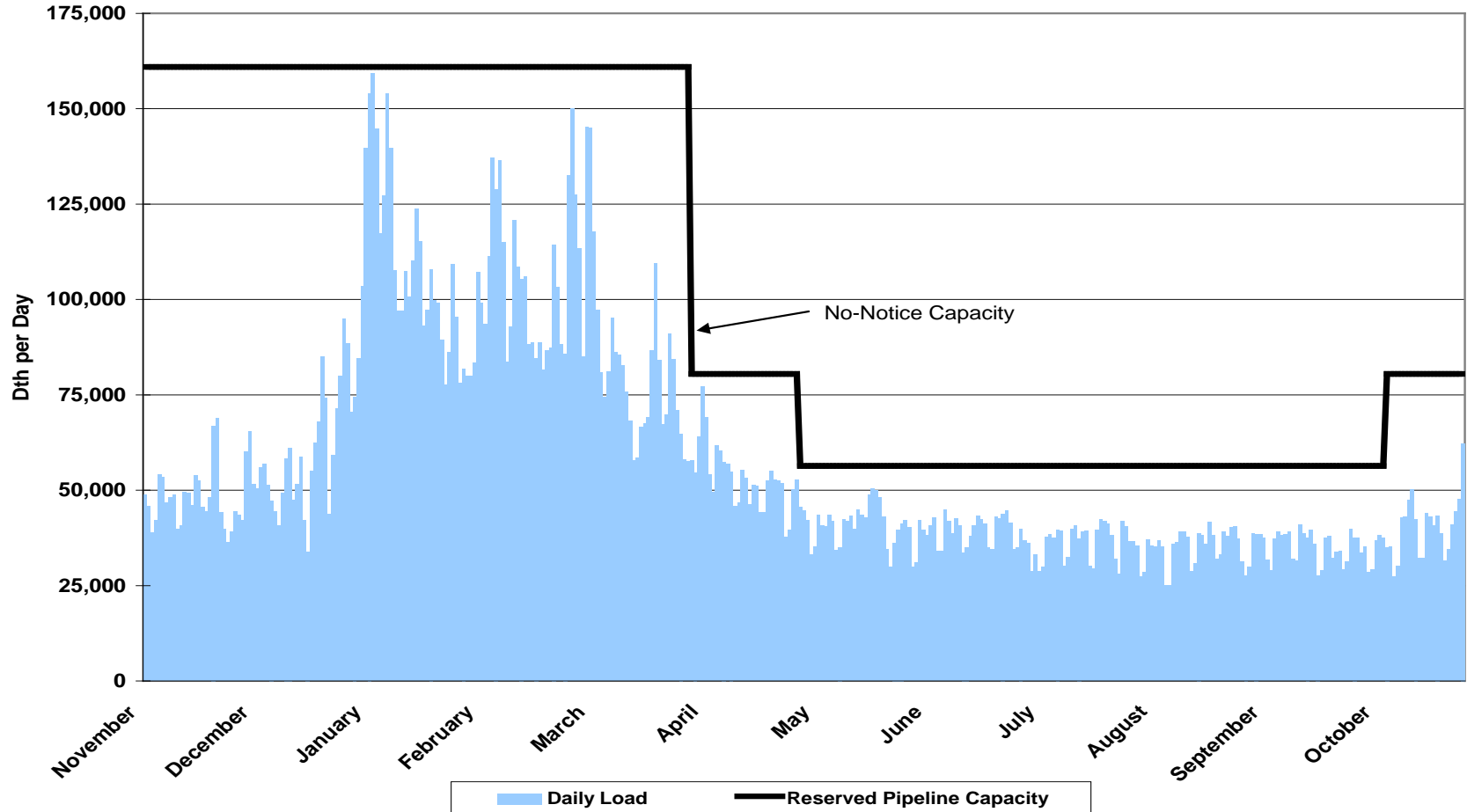
- Firm Service is offered to customers (regardless of Class of Service) under schedules or contracts which anticipate *no interruptions* (other than for force majeure). The period of service may be for only a specified part of the year as in Off-Peak Service. Certain firm service contracts may contain clauses which permit unexpected interruption in case the supply to residential customers is threatened during an emergency. Source: American Gas Association.
- Interruptible Service *is low priority service* offered to customers under schedules or contracts which anticipate and permit interruption on short notice, generally in peak-load seasons, by reason of the claim of firm service customers and higher priority users. Gas is available at any time of the year if the supply is sufficient and the supply system is adequate. Source: American Gas Association.

- CenterPoint *only* contracts for firm gas supply service:
  - Two components – Pipeline capacity and methane
  - Contract with pipelines for firm capacity
    - 5-20 year contracts
  - Contract with marketers for firm methane supply
    - Combination of long-term and short-term contracts balanced with storage services
      - 47% short-term
      - 32% long-term
      - 21% storage

# Capacity Contracted vs. Daily Flows



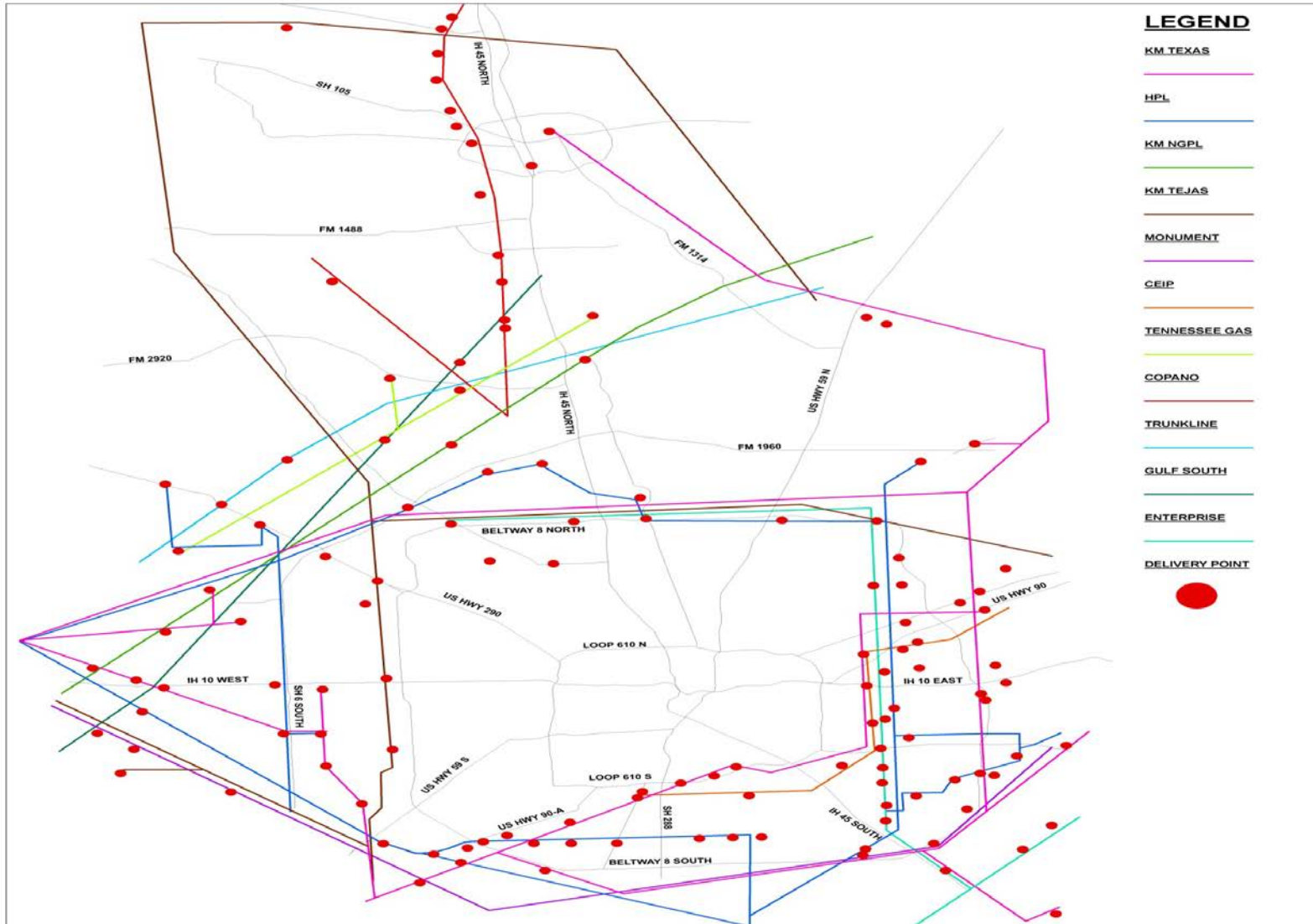
Example of Daily R&C Load on Gulf South Pipeline





- Integrated system serving approximately 1,000,000 customers:
  - 7 Intrastate Pipelines
  - 4 Interstate Pipelines
  - Current supply mix includes 45 Marketers and 3 major producers
  - 156 City Gate Stations
  - 290 District Regulator Stations

# Pipelines serving Houston



- Railroad Commission Order 489 established in 1973
  - Established highest priority for human needs customers
    - Domestic and commercial consumption
- Firm service was not interrupted at any time during the February 2011 event
- CenterPoint has not been ordered to curtail any customers since Order 489
- During extreme cold weather events, customer self curtailment generally occurs
  - School closures due to icing
  - Industrial plant may limit production due to employee availability
  - Business closures due to limited transportation
- Rolling blackouts have an impact

- Emergency Operating Plan is implemented:
  - Area of outage is identified
  - All impacted customers are turned off
  - System is purged of all natural gas in pipeline
  - Turn on procedure
    - Enter premise and turn off valves at applicable appliances inside home
    - Perform shut-in test to ensure no leakage downstream of meter
    - Opening the appliance valves
    - Lighting the appliance
    - Caution must be given to ensure customers off for business reasons are not reinstated in error
  - 1000 homes without natural gas = 40 Employees = 2 days to restore service
- New Mexico experience:
  - Scale never before seen on our system
  - Closest CenterPoint analogy is outage where 5,000 customers were lost and it took approximately 7 days to restore service