

# Contact Voltage

New York State Joint Utility Perspective

# Current New York State Regulations

- In 2008 the New York Public Service Commission issued a revised order (04-M-0159) requiring:
  - Annual testing of all utility owned electrical facilities and street lights which are publicly accessible
  - Detection equipment must detect to a minimum of 6 volts
  - Mitigation of findings to 1 volt or less
  - Mobile testing of incorporated cities of >50,000
    - Twelve mobile scans annually in New York City
    - Upstate cities scanned once per year
  - Annual reporting requirements
  - Mandated compliance with NESC
  - Penalties in excess of \$200 million for failure to comply with testing requirements

# Utilities Overview

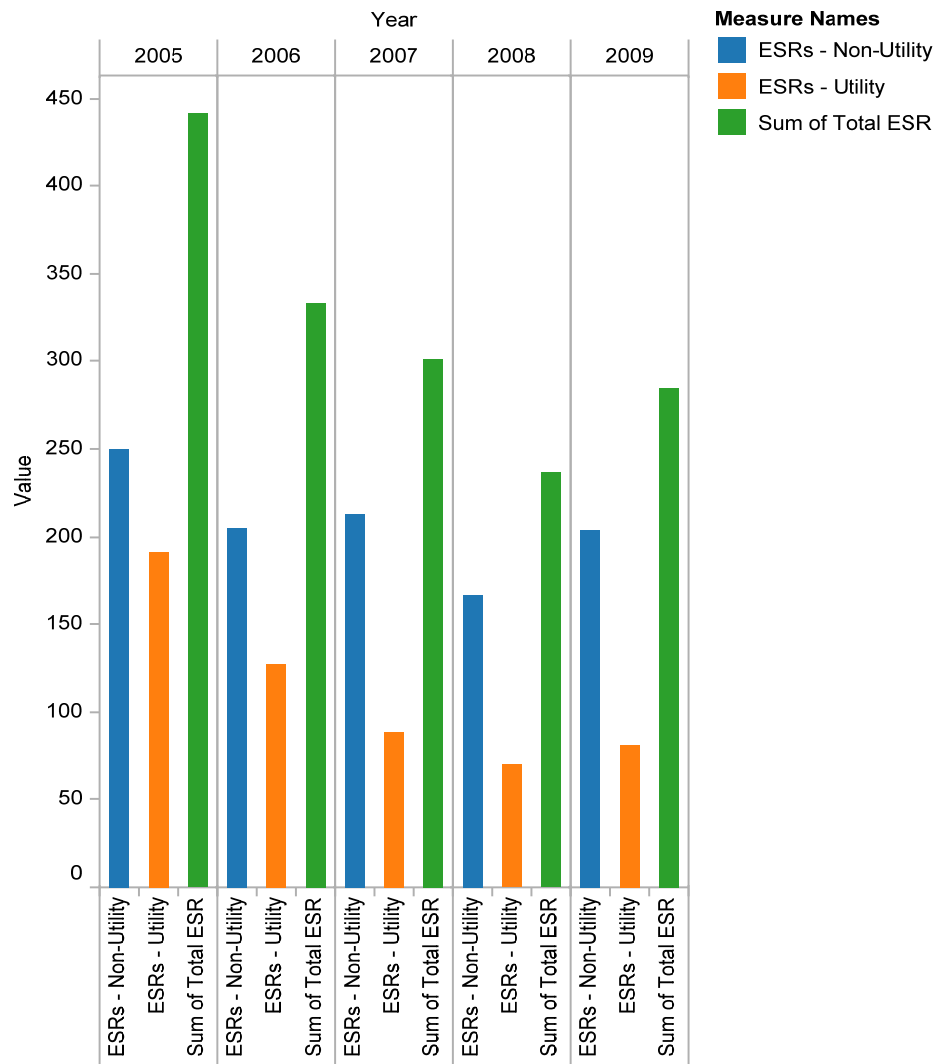
- Six large regulated utilities in New York
  - Central Hudson Gas and Electric
  - Con Edison
  - National Grid
  - New York State Electric and Gas
  - Orange and Rockland
  - Rochester Gas and Electric
- Serving over 6 million customers
- Statewide peak of approximately 33,000 MW
- Approximately 4.8 million utility owned assets and municipally owned street lights
- Collectively the New York State Utilities have performed more than 23 million manual tests since 2005
- New York State utilities have conducted nearly 33,000 investigations since 2005

# Cost of Compliance with Order

- Mobile testing for three utilities in excess of \$11 million Dollars annually
- Manual Testing in excess of \$20 million annually
- Investigation and repairs estimated at more than \$7 million annually
- Because of tight regulation and significant penalties utilities cannot right size programs
  - NYS Utilities have spent in excess of \$5 million testing transmission structures with zero contact voltage detections
    - Limited access
    - Other protective systems in place to prevent contact voltage
  - NYS Utilities have spent in excess of \$2 million testing URD structures with less than 5 contact voltage detections - Failure rate of less than .001%.

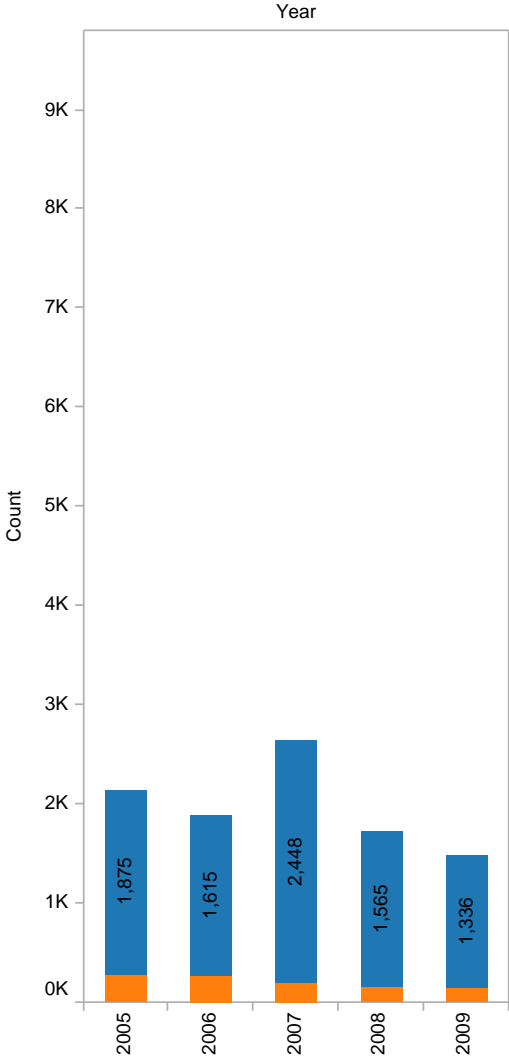
# Benefits of Compliance

- Statewide reduction of contact voltage shocks (ESRs) by more than 30% since 2005
- 58% reduction in contact voltage shocks from utility owned equipment since 2005
- Contact voltage shocks have been reduced by more than 90% in NYC since 2004
- Increased public awareness and reporting

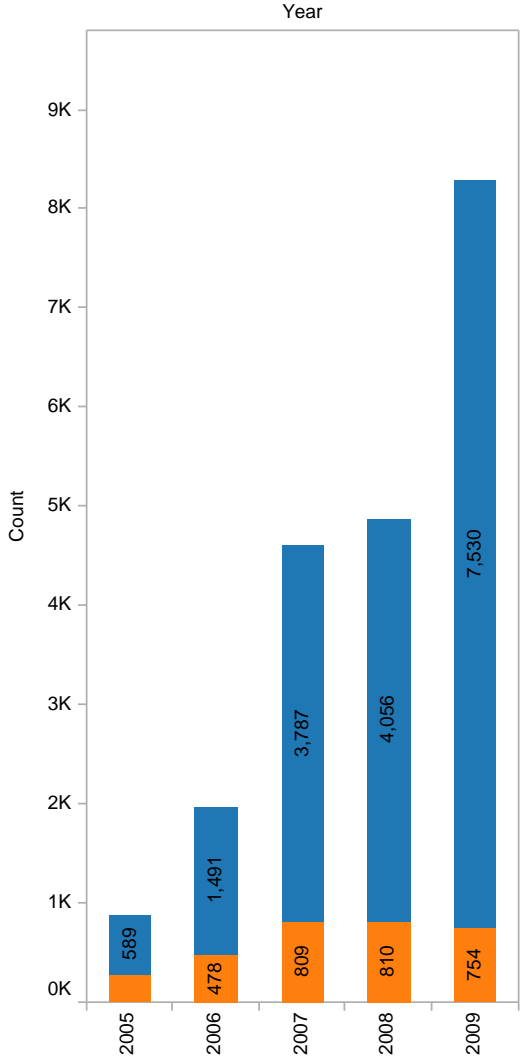


# Statewide Testing Results

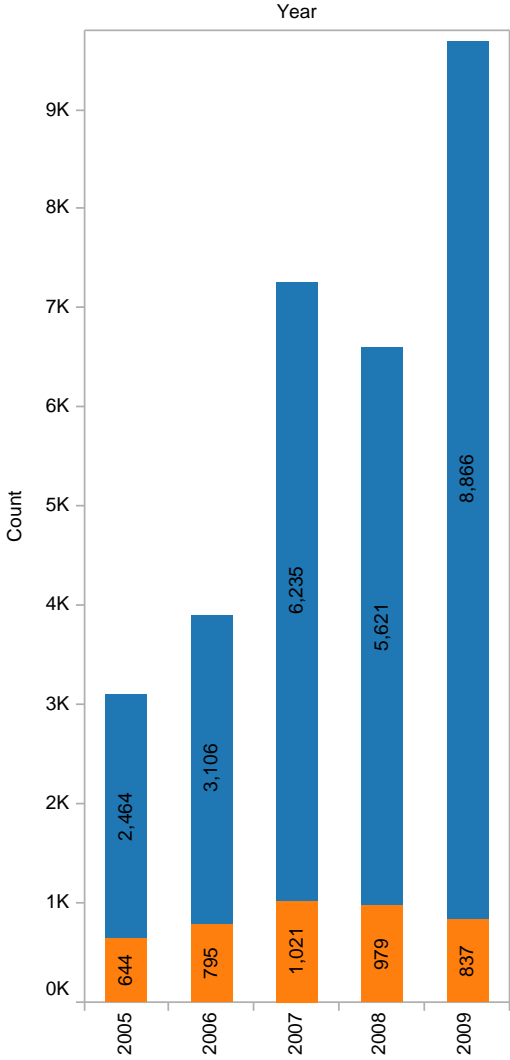
Manual ENEs



Mobile ENEs

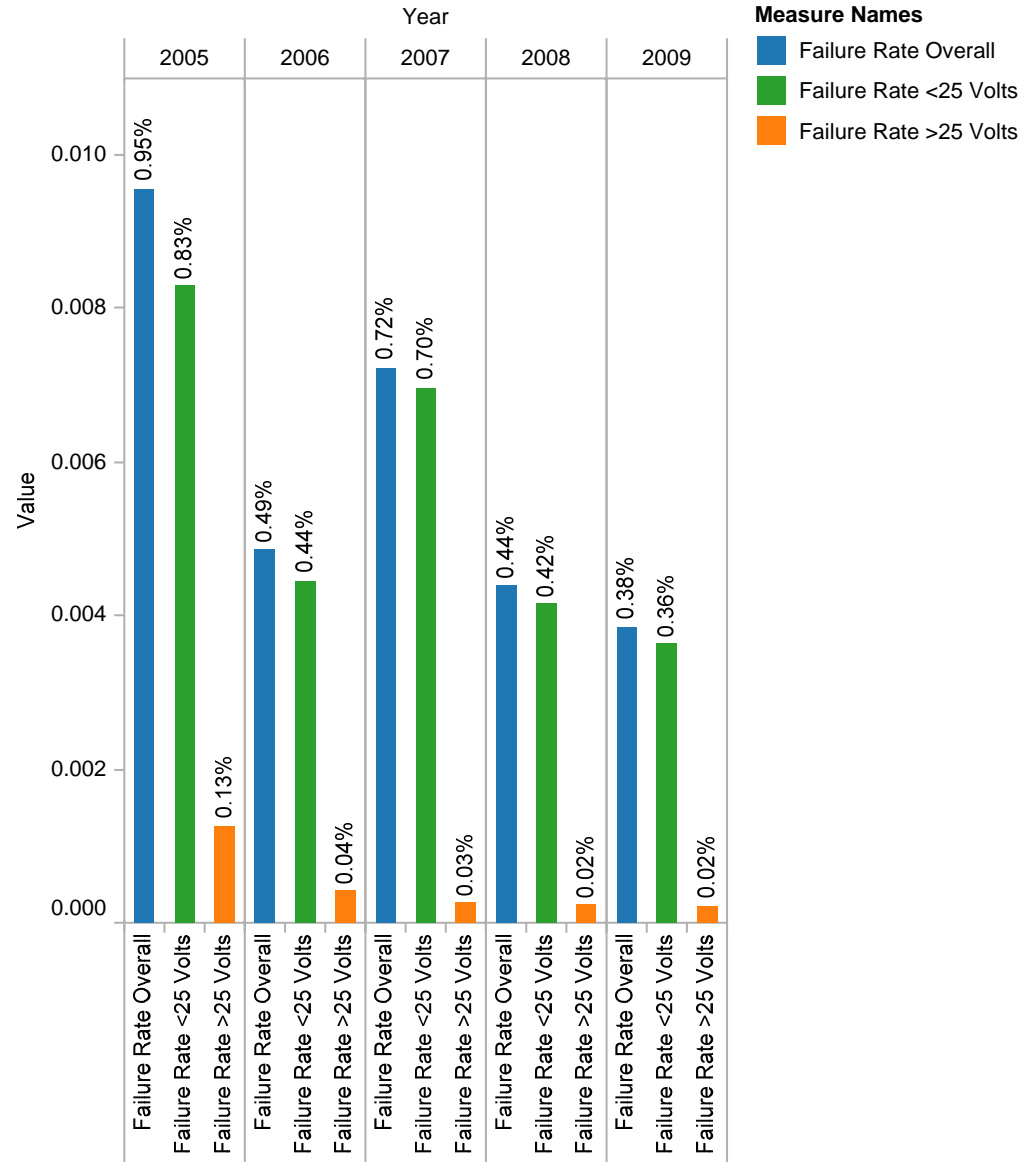


All ENEs



# Manual Testing Failure Rates

- 60% decline in failure rate since inception of program
- Overall pass rate > 99.62% in 2009
- Less than 0.02% failure rate > 25 volts



# Guidance that would improve the regulatory conditions in New York

- Troubleshooting guidance with case studies
- Provide data to allow utilities and regulators to make risk based assessments when developing programs and regulations
- Industry accepted standards for detection equipment
  - Current New York Standard is ambiguous and does not relate to standards used to develop e-field detection equipment
  - Because of uncertainty little progress has been made to establish competitive marketplace

# Guidance that would negatively impact the regulatory conditions in New York

- Guidance which is not supported by data
- Guidance which may be interpreted as prescriptive
  - Use of specific diagnostic equipment
  - Voltage levels
  - Testing frequencies
- Standards which require the use of a proprietary technology

# Topics for inclusion in P-1695 Contact voltage testing section

- **Process oriented guidance which includes:**

- Types of assets that are susceptible to generating contact voltage
  - Includes failure rate data
  - Considers impact of system design on contact voltage
- Test equipment standards for mobile and manual testing
  - Eliminate need for individual regulatory certifications
  - Ensures quality of testing
- Asset specific troubleshooting guidance
  - Implements use of harmonics analysis as troubleshooting method
  - Provides multiple methods for compliance

Questions?