



New York Electric Safety Standards for Stray Voltage

Diane Barney
Utility Supervisor
New York State
Department of Public
Service
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Overview

- History
- What is the Issue
- NY State Requirements
- Testing results
- Q&A



Important Dates

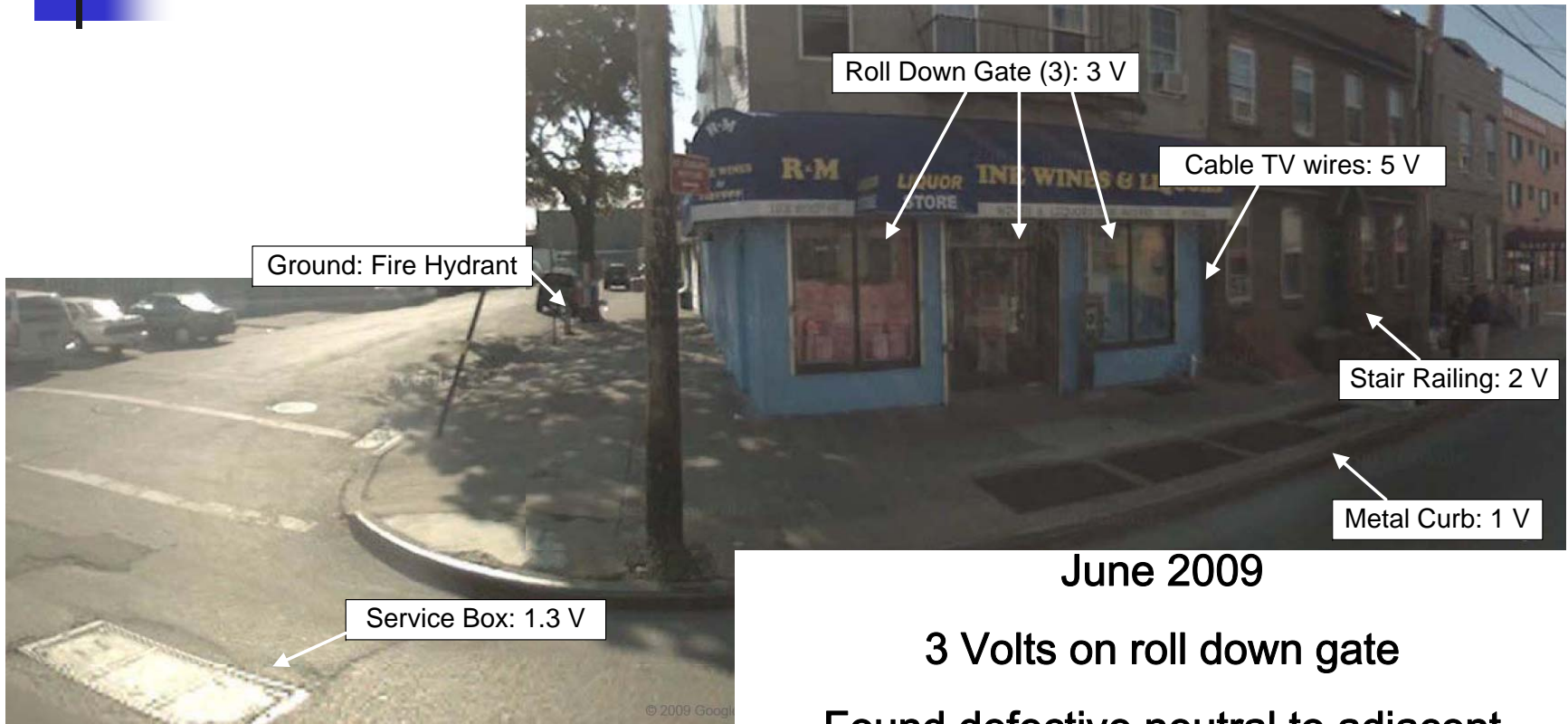
- Jodie Lane incident – January 2004
- Order for Con Edison – February 2004
- Proposed standards issued - July 2004
- Electric Safety Standards
 - Commission Order issued January 5, 2005
 - Commission Order issued November 24, 2008
 - On PSC web site: www.dps.state.ny.us



What is the Issue?

- Preventing public contact with energized facilities

Case Study – Defective Neutral



June 2009

3 Volts on roll down gate

Found defective neutral to adjacent building

Shield on Cable TV wires were acting as neutral for building



Overview of Order

- **Electric Safety Standards require:**
 - Compliance with NESC
 - Annual Stray Voltage Testing
 - Quality Assurance
 - Recordkeeping
 - Certification of testing results
 - Notification of shock reports
 - Annual reporting requirements
 - Performance Mechanism



Stray Voltage Testing

- **Annual testing required**
 - Publicly accessible facilities, excluding customer meters (within reach of pedestrians)
 - Exposed surfaces (covers) of underground facilities
 - Conductive equipment on overhead facilities such as metallic poles, guy wires, and transmission towers
 - Streetlight and traffic signal poles (at night)
 - Substation fencing



Stray Voltage Testing

■ Streetlights

- In public thoroughfares regardless of ownership
- Traffic signal poles
- Testing not required for streetlights in private parking lots or private parks
- Testing conducted at night when light is illuminated



Stray Voltage Testing

- **Testing is not required for:**
 - Company and customer-owned meters
 - Equipment located inside a substation
 - Utility equipment enclosed by customer fencing
 - Customer-owned equipment (except for shock complaints or as covered by the streetlight requirements)



Stray Voltage Testing

- **Testing equipment**

- The safety standards require use of testing devices certified to detect a range of 6 to 600V
- Widely-used device (HD LV-S-5) has range of 4.5 to 600V
 - Nov 2008 allows use of mobile detection device
- Experience indicates that it can detect voltage below 4.5V
- Detections of voltages $\geq 1V$ are recorded and reported
- Certification pending for mobile test device



Stray Voltage Testing

- **If voltage is found**
 - Additionally test publicly accessible structures and sidewalks within a 30 ft. radius of point where stray voltage is discovered
 - Utility must make the condition safe before leaving
 - Permanently repair condition within 45 days
 - Notify responsible person if customer-owned equipment is the underlying cause



Utility Facility Inspection

- Inspect all other (non-publicly accessible) transmission and distribution facilities for safety and reliability issues
- Utilities must classify level of deficiency
- Critical hazards to be guarded and mitigated as soon as possible no longer than one week
- Permanent repairs within 90 days
- 5 year inspection cycle



Notification Requirements

- Formalization of standing requirements
- Personal injury accidents
 - ***All shock incidents*** – customer makes a shock report
 - Notification must be made whether or not voltage is substantiated
 - The notification requirements apply to cases involving people and domestic animals (no squirrels or birds)



Testing Results

- Manual Testing (Jan 1 – Dec 31)
 - 2005 - 2008
 - 8,338 stray voltage detections \geq 1 volt
 - 2,324 stray voltage detections \geq 8 volts
 - 48% of detections on streetlights



Shock Reports

■ 2006

- 436 reports w/ stray voltage detected
 - 132 (30%) - utility responsibility
 - 304 (70%) - customer issue
- 290 reports w/ no stray voltage found

■ 2007

- 301 reports w/ stray voltage detected
 - 89 (30%) – utility responsibility
 - 212 (70%) – customer issue
- 247 reports w/ no stray voltage found



Contact Information

Gavin Nicoletta

Gavin_Nicoletta@dps.state.ny.us

518-486-2496

Michael Worden

Michael_Worden@dps.state.ny.us

518-486-2498