



By Don Horne

CON EDISON HAS BIG BROTHER LOOKING OVER ITS SHOULDER

Consolidated Edison has Big Brother looking over its shoulder in the Big Apple, following blackouts in the middle of July that affected thousands in western Queens.

Blackouts have happened before in New York City, and they'll happen again. But what tweaked the nose of NYC's Office of Emergency Management – and especially commissioner Joseph F. Bruno – was that Con Ed's original estimate of 2,500 customers going without power was woefully underestimated.

In actuality, it took Con Ed four days to acknowledge that 25,000 customers were in the dark.

The Queens' blackout affected some 100,000 people in total.

The commissioner admitted that Con Ed has never erred on the numbers before, and Con Ed has stated that their original estimate was based on the number of phone calls that were coming through on their hotline.

The blackout – which began on July 17 – came close to affecting the entire Long Island City network two days later (some 100,000 customers, or 300,000 residents in Queens).

The scene was set for a blackout when 10 of the 22 high-voltage feeder cables that supply power to the network went down: from 8:38 to 8:53 p.m. on July 18 and from 11:33

a.m. to 1:10 p.m. on July 19. In most situations, customers begin to lose power when more than two feeders fail.

At one point early in the afternoon, Con Edison warned the commissioner

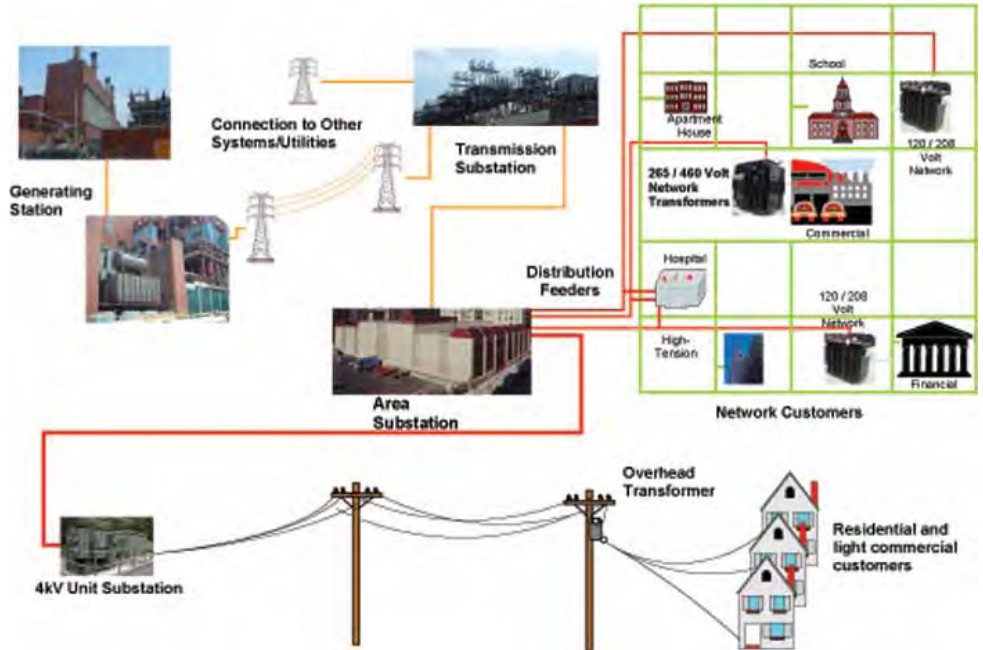


Figure 1: Con Ed's power delivery system

that it was considering a shutdown of the network to pre-empt a breakdown and further damage to equipment.

Naturally the commissioner was concerned for people becoming trapped

blackout is the city's first response to the blackout. Comprised of representatives of the police and fire departments, the Office of Emergency Management and the mayor's Community Assistance Unit,

the team has been utilized seven times to investigate outages of "significant impact" (or affecting at least 1,000 customers), going door-to-door to estimate the number of people affected.

Harsh words have been directed at Con Edison by the commissioner,

stating that "they are the entity required to provide electric service to our city. They have the authority to do that. I'm

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The creation of the Power Outage Response Team in the wake of the July blackout is the city's first response to the blackout. Comprised of representatives of the police and fire departments, the Office of Emergency Management and the mayor's Community Assistance Unit, the team has been utilized seven times to investigate outages of "significant impact"

in subway tunnels, and wanted a minimum warning time to allow people to go to safety.

The creation of the Power Outage Response Team in the wake of the July

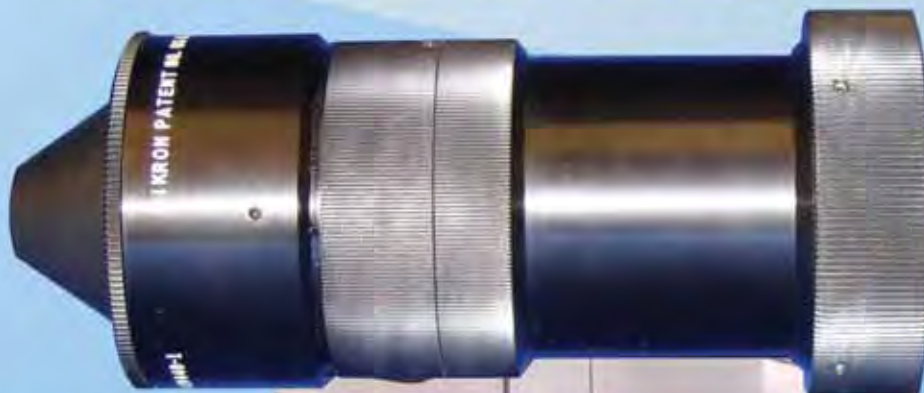
PROBLEM:

arc flash!

HEAT - PRESSURE WAVE - PLASMA - SEVERE BURNS
CONCUSSIONS - MOLTEN METAL PROJECTILES
HEARING LOSS - COLLAPSED LUNGS - BROKEN BONES
LOSS OF LIMB - MENTAL HANDICAPS - LOSS OF LIFE

SOLUTION:

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very unimpressed with the way they've done that."

Coming to the defense of Con Ed, the director of the Office of Electricity and Environment at the State Public Service Commission James T. Gallagher, which is investigating the blackout, said that Con Edison had doubled its annual spending on transmission and distribution equipment since 2001 to more than \$1 billion (not including an additional \$100 million a year to rebuild secondary power lines).

But the damage has been done, and Con Edison now has New York City looking over its shoulder as to how they are delivering – or should be delivering – electricity.

Con Edison delivers electricity to 3.2 million customers in New York City and Westchester County – a service territory of 660 square miles with a population of approximately 9 million people. Electricity is delivered through approximately 95,000 miles of underground cable and 33,000 miles of overhead cable.

As shown in figure 1, the electric power system comprises three distinct sub-systems: generation, transmission, and distribution.

OVERVIEW OF THE LONG ISLAND CITY NETWORK

The Long Island City (LIC) network serves northwest Queens and includes the neighborhoods of Long Island City, Astoria, Sunnyside, Woodside, and Hunters Point. The area is bounded by the East River on the west and north, the Brooklyn-Queens Expressway on the east, and Newtown Creek on the south (see figure 2).

The network is supplied by the North Queens substation through 22 primary feeders, totaling approximately 290 circuit miles in length, and 1,194 network transformers. They supply electricity in an extensive underground system of 4,400 manholes, 11,000 service boxes, and 1,700 miles of secondary cable, and on 3,000 utility poles, all of which combine to deliver power to approximately 115,000 customers.

In 2006, the forecasted peak demand for the Long Island City network is 395 MW. Commercial customers' electric demand is estimated to be 300 MW and residential customers' electric demand is



Figure 2: Map of Con Edison's Long Island City Network Boundaries

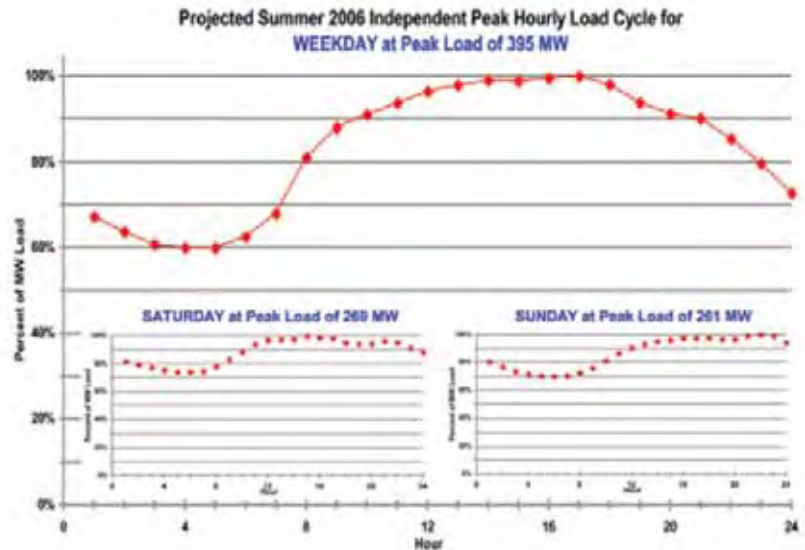


Figure 3: Long Island City Network Hourly Demand Cycle

estimated to be over 100 MW. The two demands, however, do not occur at the same time. The weekday demand cycle is shown below and the network generally peaks between 14:00 and 18:00 (see figure 3). Weekend customer demand in the

network is estimated to be 269 MW, approximately 68% of the weekday peak. The demand cycle reflects the increase in consumption over the course of a given weekday or weekend as customers use more or less electricity.