

ComEd pays for misspent decades

Aging infrastructure
now haunting utility

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TRIBUNE STAFF WRITERS

ComEd crews have begun scurrying down manholes around the city looking for the answer to a question many around Chicago are asking: Will the lights stay on?

After several short circuits in underground cables led to widespread blackouts, including one that knocked out power to the South Loop late last week, Commonwealth Edison is trying to determine if its power grid is reeling from a weeks-old case of heat stroke.

In the two weeks since a heat wave crested with 100-degree temperatures, several cables have failed, raising the possibility that the stresses of heat and high electricity use caused widespread damage to buried cables.

But the larger story of ComEd's infrastructure prob-

■ Daley sends letter to ComEd, insisting on more input from city, engineering firms. **Page 19.**

lems turns not only on physics but also on finance.

Evidence of the problem is literally buried in aging underground cables and figuratively in aging government documents that detail ComEd's past spending—or, more accurately, its parsimony.

Like most everything at ComEd, following the trail of the problem eventually leads back to the utility's struggles with its nuclear generation program, the most ambitious in the nation.

Even a decade ago, many were warning that some of the billions of dollars spent to build the nuclear plants should have been spent on wires and transformers.

Ironically, at the point at which ComEd seems to have

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turned around its mismanaged nuclear plants—this summer, for the first time in years, all five plants were up and running—it is now suffering the fallout from what many say has been equally shoddy management of its more prosaic electricity delivery system.

Meanwhile, as the return of 90-degree temperatures are predicted for this week, ComEd was bracing for the first major test of its infrastructure since the end of the July heat wave.

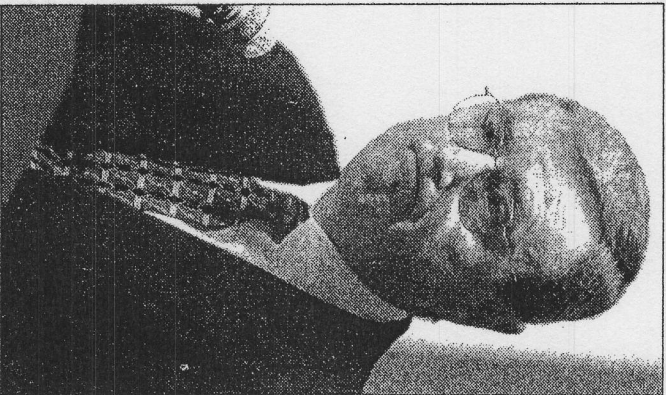
"We are trying to give ourselves, as well as our customers, confidence that the system can withstand the next round of heat waves," said ComEd Vice President Robert Manning.

Over the weekend, about 50 major cables stressed during the heat wave were to be inspected by workers roving from one manhole to the next. Other crews were to check on the power transformers at substations.

At the same time, members of a task force composed of company officials and others in the electricity industry were to begin an even wider inspection of the system and its maintenance, company officials said.

Infrastructure maintenance involves replacing cables that handle 4,000 volts with ones that handle 12,000 volts. It includes taking "thermographs" of cable splices to see if they are leaking heat, a sign of trouble.

Maintenance even has to do with trimming trees, a practice that ComEd had skimped on in recent years, saving millions of dollars



Tribune photo by Terry Harris

ComEd Vice President Robert Manning: "We are trying to give . . . customers confidence that the system can withstand the next round of heat waves."

but causing more blackouts during storms when limbs fall on cables.

In the end, tending to the details of the system day to day is the only way to make sure the lights go on when a switch is flipped. Even ComEd acknowledges it hasn't done enough of that.

"It's not apparent that we have kept up with all of the preventive maintenance we could have been doing—inspections, monitoring, calibrations," said David Helwig, a ComEd vice president brought in Friday to oversee the utility's transmission and distribution

system.

Paul McCoy, the ComEd executive who had that job for more than two years, was asked to resign Friday as public confidence in the system he oversaw evaporated.

The concern now is that the heat wave might have damaged the miles of cables in that system.

During a heat wave, the cables get hot as they carry more electricity to run air conditioners, and then they get hotter as the ground they are buried in warms up.

"You can cook the insulation," said David Torrey, an electrical engineering professor at Rensselaer Polytechnic Institute in Troy, N.Y.

"If you leave a roast in your oven too long, what do you get? Charcoal. You are basically carbonizing the insulation, and carbon conducts electricity."

Instead of preventing short circuits, the ruined insulation creates them by allowing current to flow between live cables.

Paul Grant, a science fellow with the Electric Power Research Institute, pointed out that Auckland, New Zealand, recently lost power for weeks because cables failed when a drought caused the ground to lose its ability to dissipate heat.

While this particular problem might be novel, ComEd has been battling more common infrastructure problems for some time.

Chicago fought for years to have ComEd commit to spending more money to upgrade its systems.

"They weren't on a regular basis doing the distribution maintenance and upgrades, from

tree trimming to changing their cables, that they needed to do," said William Abolt, the city's environment commissioner.

The shortcuts are spelled out in documents that detail ComEd's spending on its transmission and distribution system.

When ComEd told the city in 1993 what its spending plans were, the utility said it would invest \$1.45 billion to improve transmission and distribution in the city over the next 10 years.

The next year, the company revised that number down, saying it would invest \$1.1 billion. In 1995, it went down yet again, to just more than \$1 billion.

At the same time, the company wasn't even spending enough money to meet the lower goals: It spent about \$80 million each year in 1993 through 1995, while charging customers some of the highest electricity rates in the Midwest.

The utility was following the same pattern across the rest of northern Illinois.

In 1990, ComEd told the Illinois Commerce Commission that it planned to spend a total of \$2.2 billion on building transmission and distribution facilities through 1993, according to the Citizens Utility Board.

Instead, ComEd actually spent \$1.6 billion, or 27 percent less than it had projected, according to CUB.

For most canceled projects, ComEd said its engineers determined that the work simply wasn't necessary.

After several large outages on Chicago's West Side in the summer of 1990, the Commerce Commission hired a consulting firm to examine the reliability of

ComEd's power transmission and distribution.

The consultant's report, issued in 1992, found that failures were on the rise, partly because of what it described as underfunding of the system's operation and maintenance.

ComEd's spending per customer in the 1980s and into 1990 stood well below that of a group of other utilities.

Though more than 40 percent of the underground cable in Chicago was more than 40 years old, ComEd had yet to put into effect its plan for identifying and replacing old cable, the report said.

The company now replaces cables believed to be damaged but not those simply suspect from age.

At the time, consumer groups pointed out that ComEd's budgets had been dominated by the construction of six nuclear plants.

The new plants were then estimated to have cost \$13 billion—six times more than originally projected. Five of those plants are operating; the sixth plant, at Zion, has been closed.

ComEd's cash reserves had been further drained by the utility's determination to maintain its annual stock dividend, despite lowered company earnings, the critics said.

"[ComEd CEO] John Rowe is saddled with the legacy of ComEd's underinvestment for many years in the basic maintenance and improvements in the distribution system," said Howard Learner of the Environmental Law & Policy Center.

"Throughout the 1980s, as the construction of the nuclear plants spiraled into the billions, ComEd robbed Peter to pay Paul," Learner said.