

Banks' Looting Of Con Ed Sets Preconditions For Shutdown

Although it is not yet clear whether a bolt of lightning caused this week's New York City blackout, one thing is clear. Responsible Con Edison officials knew that, given the condition of their equipment systems, a blackout was imminent. According to one Con Edison engineer interviewed by this newspaper after the crisis, "The New York City power grid is so unstable that a guy with a shotgun and a pick-up truck could bring down the whole thing."

In fact, there were at least two other occasions in 1977 when similar blackouts of the region were barely avoided. These near emergencies, and New York City's 24 hours of crisis two days ago, were directly due to Con Edison's financial and investments policies over the past decade. These policies, directed by Con Edison's Wall Street creditors, have rendered the giant facility virtually unable to meet the city's power needs on a day-to-day basis.

Con Ed Cutbacks

For at least the past ten years, Con Edison's board of directors, chaired by David Rockefeller protégé Charles Luce, has overseen the utility's sale of a number of its power-generating facilities to the New York State Power Authority. The revenues of these sales have been funneled directly into the coffers of Con Edison's cash-starved Wall Street creditors. Under this forced liquidation policy, Con Edison not only maintained quarterly debt payments to the banks, but actually retired large chunks of its outstanding debt as well.

This Luce-Rockefeller "cost-effective" approach has resulted in a top-down purge of Con Ed officials since 1967. Its effects on Con Edison led directly to the July 13-14 blackout of New York, and prolonged the crisis once it had arrived.

First of all, continuing sales of generating facilities forced Con Edison into even larger purchases of electricity produced by other companies at stations outside of the New York metropolitan area. In the last five years, Con Edison has added approximately 2,000 megawatts to its nominal generating capacity, giving a total capacity of 9,000 megawatts. However, the bulk of this energy — nearly half of all that Con Ed generates after 5:00 p.m., for example — is obtained through agreements with various "New York State Power Pool" companies from which Con Edison buys electricity. This has resulted in a dangerous over-reliance on imported power passing through the Westchester region.

Under these circumstances, trouble on the Westchester lines could force the New York power pool, as well as New Jersey and Long Island companies, to "pull the plug" on New York City to prevent a full Northeast blackout or damage to overloaded transmission lines into New York City. This is exactly what happened on July 13. Without back-up generating capacity immediately available to the city, all engineers' attempts to reduce load and voltage had little chance of preventing growing in-

stabilities in the lines and the resulting total shutdown.

Secondly, the gutting of Con Edison's facilities resulted in the junking of auxiliary generating and equipment capacity, facilities which should have been available to insure a rapid return to normalcy after the July 13 blow-out. In January and May of this year, near breakdowns alerted Con Edison officials of the necessity of maintaining emergency and auxiliary equipment in top condition. In January, the entire system teetered at the edge of blowout for several hours, a near-emergency attributed to operation at near-capacity during intense weather. In May, the system blew several circuit breakers, and it was only the manual opening of these switches by an alert supervisor that averted a major blackout. These warnings were overlooked and when the crisis came it was seriously prolonged by multiple equipment failures. In at least two instances, poorly maintained reactors (inductive coupling devices) on the Westchester power lines collapsed during the night of July 14. If this equipment had functioned properly, power could have been restored after only four to six hours of darkness.

This delay was compounded by the 30 to 35 percent understaffing of maintenance and service personnel Con Edison has implemented as a cost-saving measure. Crucial time was lost during the emergency in transporting personnel to affected areas because required emergency personnel had been attrited over the past several years.

Investigate Con Ed

In 1965, with plants damaged and the entire energy grid of the Northeast involved in the malfunctions, electrical service was restored to most areas within only a few hours after the blackout began. The more than 24 hour delay in power restoration on July 14 was due to a combination of deliberate manipulation of the blackout and the decrepit state of Con Edison's facilities.

It is impossible to discount the possibility that sabotage or terrorism played a part in triggering this week's blackout. As officials of Con Edison said themselves, the reported sequence of three lightning bolts hitting three separate electrical lines during one thunder storm is a one-in-a-million possibility. However, even such disasters can, and must, be protected against.

A detailed investigation into the precise causes of this week's blackout must be undertaken to equip public officials for immediate decision-making to reverse Con Edison's policy and prevent the near-future crises we can expect if no action is taken.

Timetable For Blackout

January, 1977: During intense cold weather, the Con Edison system teetered for several hours on the edge of a major breakdown. The operation of the system dangerously close to full capacity was blamed. News

of the near blackout was not publicly released.

5:00 pm, May 7, 1977: Due to unseasonably hot weather, the system blew several circuit breakers. Thanks only to the manual reopening of these switches by an alert supervisor (who over-rode automatic safety devices) a major blackout was averted.

8:00 pm, July 13: A severe series of thunderstorms hit the southern Hudson Valley. Eyewitnesses reported extensive lightning and damage from falling tree branches. However, the storms had been predicted and were not a surprise.

8:37 pm: Lightning is reported to have struck a 345 kilovolt electrical line near Buchanan, N.Y., triggering circuit breakers which isolated the line.

8:50 pm: Lightning is reported to have struck a 120 kilovolt electrical line near Millwood, N.Y. (about 15 miles from the first line.) Again the line was shut down.

9:00 pm: Lightning is reported to have struck another line, leading south from Pleasant Valley, N.Y. (in the same area). The three strikes together cut about 3,000 MW from New York City, almost the total "external power" supplied to the city. The tripping of the circuit breakers resulted in efforts by the automatic load-shedding equipment in the system to compensate for the disruption, by decreasing the demand on the system. Voltage was reduced on the system first by 5 percent and then by 8 percent. At this time, emergency allocations of power from New Jersey and Long Island were patched into the New York grid.

9:10 pm: Attempts to balance the load and match the emergency capacity with the load were unsuccessful. The power from Long Island was cut for fear of damaging the lines. At this point, the major source of power to the city was the "Ravenswood 3" fossil fuel plant in Queens, and a line from New Jersey. This line was described by Con Edison engineers as "very weak."

9:30 pm: The system was by now heavily overloaded, and, because of the inherent instability of the overloaded and underprotected system, unstable oscillations set in. In a scenario familiar to any engineer, the coupled nonlinear oscillations quickly shut down the whole system, and the blackout resulted. This same instability, exacerbated by the necessity of transporting electricity from long distances into the system, *delayed full resumption of power for almost 24 hours.*

10:15 pm: There was another incident, the explosion of a transformer at the transmission station at Buchanan. This occurred after the blackout, and seems to have had minimal effect on the loss of power or its restoration.

1:30 am, July 14: Attempts to restore power through the Westchester corridor require energizing an inductive coupler on the line between Eastview and Dunwittie. This coupler fails because of undermaintenance and delays for several hours restoration of power.

4:00 am: Feeder lines to southern Manhattan blew out their inductive couplings due to undermaintenance. This caused delays in restoration of power to the whole system.