Energy Deregulation Also Threatens Crisis in U.S. Transmission Grid

by Marsha Freeman

This Summer, electricity shortages that will cause brownouts and life-threatening blackouts will plague the nation. So-called shortages in the state of California will be caused principally by the deregulation of that state's electric utility industry, which, as this magazine has been documenting, put electricity generation in the hands of national and international conglomerates which have created artificial shortages in order to drive up prices, and their profit margins.

But along with the *manipulated* supply shortages, many states and regions of the country are facing *actual physical limitations* on the delivery of electricity to home, industry, and agriculture. The electricity highway that moves power from generating plants to localities has been left to deteriorate and is dangerously congested. Already ten years ago, some long-distance transmission lines were operating at 90% of their physical capacity. Thanks to deregulation, this condition has spread throughout the North American power grids and worsened, as more and more electric power is sold and consumed far away from where it was produced, in search of the highest wholesale prices.

Last year, Northern California was hit with blackouts even when enough power was available in the state, because of congestion on the Path 15 series of high-voltage transmission lines that run north-south through the state. In Texas, the major north-south transmission artery could not move enough power in the Summer of 2000, and parts of the state suffered power shortages. And in New York, the city is now struggling to bring small, emergency power plants on line before the Summer heat arrives, because 80% of the electricity for the city has to be produced inside it, due to constraints on external transmission lines.

No area of the country is exempt. On April 8, the chief economist for the Missouri Public Service Commission warned that with 500 different "power marketer" companies in the United States all looking for transmission lines to sell their power where high prices can be found, the existing power lines "aren't big enough to handle the loads that are expected this Summer." The PSC added that while generation has marginally increased over the past decade, nationally the number of transmission lines has remained static.

Until now, long-distance high-voltage power lines have been built and owned by the regulated utilities that use them cooperatively to transport power to consumers. But now that the disastrous sell-off of electric generation capacity by utilities to financial conglomerates is well under way, the attention of the "free marketeers" has turned to divesting the utilities and regional grid operators of the transmission system, to turn it over to profit-making pirates.

A Highway in Electrons

When Thomas Edison started operating his Pearl Street Station in New York City in 1882, the wires carrying the electricity to the customer only had to travel a few blocks. As electric generating technology advanced, larger, more efficient, and more cost-effective plants were built, with customers farther and farther away from the site. High-voltage power lines, to increase the density of energy transported, and therefore its economic efficiency, were soon needed. A revolution in transmission technology began in 1896, when hydroelectricity generated at Niagara Falls in upper New York State, had to be delivered 22 miles to the Buffalo Street Railway. That 11,000-volt line was soon surpassed by a 60,000-volt line over San Francisco Bay in 1901, and today 750-kilovolt (750,000-volt) lines criss-cross the nation.

As consumption of electricity grew, small electric companies were consolidated into town or city-wide organizations to avoid duplication of infrastructure, to take advantage of economies of scale, and to provide reliable power when a local generating plant went out of service. Coordination of high-voltage transmissions lines, built to bring power from one large generating unit to a number of localities, became necessary, especially as different states shared power from single facilities.

This process of coordination was accelerated under President Franklin Roosevelt's 1930s establishment of the seven-state Tennessee Valley Authority, the Federal agencies to market power to states in the West from huge hydroelectric dams, and the Rural Electrification Administration. Eventually, this transmission system brought reliable, affordable electricity to every home and farm in America.

The U.S. electrical transmission grid is being overloaded by the demand of deregulated "power marketers" to sell to the highest bidder, no matter how far away.

As the electricity highway grew, state-wide power grid operators found it advantageous to "pool" their resources, to be able to draw upon power from systems in neighboring states in the event of emergency, through interconnected transmission lines. After the blackout in Canada and the East Coast in 1965, during which the interconnected grid system allowed electricity to be brought in from as far away as Tennessee to restore service, the National Electric Reliability Council (NERC) was formed, to bring all of the players into voluntary cooperation, and prevent a similar event in the future.

NERC divided North America into four large transmission interconnections in the West, the East, Texas, and Quebec. These large regions could coordinate activities, when needed, to improve reliability. In an emergency, with equipment down, power from one part of the country could be "wheeled" across state lines to another, to keep the entire system stable.

But in the national frenzy that took place after the oil crisis of 1974, and the assault by environmentalists, this intricate electricity transmission system was under attack, from which it has never recovered.

Deregulation on Top of Environmentalism

In 1976, Dr. Andrew Marino, a research biophysician, asserted that exposure to electromagnetic fields, such as those near high-voltage transmission lines, could cause altered blood pressure, fatigue, headaches, and malfunctioning of the central nervous system. A study in 1979 hypothesized that childhood cancer could be the result of living near power lines.

This hocus pocus "science," akin to the two-headed cow stories after the Three Mile Island nuclear plant accident in 1979, began a wave of "citizen" protests, fueled by anti-nuclear environmentalists. They succeeded in stopping the construction of badly needed transmission lines all over the country, with the most celebrated legal cases in New York, Texas, and Florida.

In 1977, coalitions of environmentalists and frightened farmers, American Indians, and students began protests against new transmission lines. In New York, after demonstrators were arrested and protests grew larger and more violent, the head of the Power Authority of the State of New York agreed to cancel all plans for additional high-voltage lines.

Farmers and environmentalists in Minnesota disrupted the land surveying for a new line, and in 1978, some 215 state troopers were used to keep angry farmers under control. When construction on the line finally started, fifteen 150-foot-high transmission towers were toppled.

There has been no reputable scientific study that has conclusively shown that electromagnetic radiation from power lines causes any debilitating physical effect. Yet few utilities even try to start the process of expanding capacity under current political conditions.

The environmentalist assault on transmission lines in the mid-1970s, went hand-in-hand with the Federal energy poli-

cies being developed for President Jimmy Carter by Trilateral Commission think-tanks and their environmentalists, after the oil hoax of 1974.

It was under the Carter Administration that the electricity deregulation policies, which are crippling our energy supply today, began. In 1978, a panoply of bills was signed by the President to deal with what he termed "the moral equivalent of war." They were based on the idea that conserving energy was "cheaper" than building new power plants, and that "small is beautiful" decentralized plants would take control of electricity out of the regulated electric utilities.

The Public Utilities Regulatory Policies Act (PURPA) opened the electric grid system to all non-utility producers who qualified. These "qualifying facilities" were exempted from state and Federal regulatory procedures, and were encouraged to wheel electricity across grid systems, so they could sell to any utility in the country to get a better price. They were also exempt from the Public Utility Holding Company Act of 1935, enacted to prevent Wall Street financial abuse in the electric utility industry.

For the first time in history, it was proposed that the interconnected grid system would be used (or abused) for "economic" purposes, rather than to ensure reliability. The law stated that the grid had to be opened specifically to encourage the use of "alternative" energy sources. Studies were produced to show that the country would run out of oil, natural gas, and nuclear fuel, in order to justify these expensive and unreliable "alternatives." In 1980, the Federal Energy Regulatory Commission (FERC) ruled that Qualifying Facilities must derive more than 75% of their energy input from biomass, renewable sources (solar, wind), or waste.

By 1988, NERC was warning that the wheeling of power around the country to find the cheapest source to buy electricity, or the highest price to sell it, would put stress on a system that was not designed for that purpose. Some power lines were already operating at 90% of capacity. In an emergency, NERC stated, the capacity would not be available to bring power where it was needed, threatening the reliability of the entire system.

When states began passing deregulation bills in 1996, a major requirement was that utilities divest themselves of their generating capacity. Free marketeers today are promoting the complete "unbundling" of utility services, next targetting the transmission system for deregulation. Companies, such as Trans-Elect, want to spin off networks of independently owned transmission lines. For 20 years, FERC has promulgated rules to promote deregulation, and in the current administration, this will only become intensified.

The current push from FERC is for Regional Transmission Organizations. FERC's Order 2000, approved in December 1999, promotes such a development, stating that the grids can be state-wide non-profit Independent Systems Operators, such as in California, but they can also be stand-alone, for-profit businesses.

Before deregulation, regional transmission grids were already in place. Participation by utilities was voluntary, and the only objective was to make sure the system was stable and reliable. Introducing the profit motive into the transmission system will do for delivering power what deregulation has done to producing power in California.

'California Effect' Set for U.S. Northeast

by John Hoefle

Since the beginning of 1998, regulated U.S. electric utilities have sold some 378 power plants with a generating capacity of 128,000 megawatts of electricity to non-utilities, an amount equivalent to nearly 20% of the utilities' generating capacity as of the end of 1997. In 1998, fifty plants with a nameplate capacity of 24,976 MW were sold, followed by 225 plants with 55,070 MW of capacity in 1999, and 103 plants and 47,991 MW in 2000.

The sales fall into three general categories. First, holding companies which own regulated electric utilities are transferring the plants out of their regulated utilities into their own unregulated subsidiaries (example: Dominion Resources, the parent of Virginia Power, has transferred virtually all of Virginia Power's generating capacity to Dominion's Dominion Generation subsidiary, creating its own pirate "marketer" operation). Second, holding companies which own regulated utilities are buying the generating plants being sold by unrelated regulated utilities (example: in 1998, Pacific Gas & Electric bought 15 power plants with a generating capacity of 3,975 MW from New England Power Company, while selling some of its own power plants in California). Third, regulated utilities are selling generating plants to non-utility companies, i.e., pirates like AES, Dynegy, Calpine, and Reliant.

At the same time, there is a merger wave among the utility holding companies, concentrating the remaining utility generating capacity in ever fewer hands.

The timing of the waves of power plant sales over the past few years, has been governed principally by what states would permit as part of their new deregulation laws. In Nevada this month, their law was reversed, and sales were stopped dead. On April 17, Gov. Ken Guinn signed new legislation to stop deregulation, which cancelled pending sales to Reliant and Mirant, of power plants owned by Sierra Pacific Resources and Nevada Power, the traditional utility companies in the state.

Figure 1 shows that of the 103 power plants sold last year, and reclassified as "unregulated," 95 of them were concentrated in the Northeast/Mid-Atlantic region, with 53 of them