ELECTRIC RELIABILITY AND RESTRUCTURING

July 1998

Unseasonable hot weather in late June caused several utilities in the Midwest to curtail the delivery of electricity to many end-use customers. These customers were primarily large manufacturers who are served under interruptible contracts. The wholesale power markets in the Midwest also experienced unprecedented short-turn run ups in price causing several utilities and power marketers to incur large financial losses. At least one marketer defaulted on the delivery of power. Some skeptics of competition and the press question whether recent attempts to restructure the electric industry were a contributing factor in creating this emergency. As Congress and the States consider further restructuring of the industry, including mandating retail-level competition, it is a legitimate concern that such changes do not compromise electric grid reliability.

THE FACTS

The power crisis in the Midwest was precipitated by a combination of factors that are unrelated to restructuring:

- ***Several large utilities were severely short on generating capacity because of planned and unplanned outages.***

At one time during the last week of June, the following plants -in Ohio alone- were off-line as a result of unplanned, "forced" outages: 1,300 MWs at AEP's Gavin coal plant, Cinergy's 1,300-MW Zimmer coal plant, AEP's 1,425-MW Muskingum River coal plant, the 1,830-MW Cardinal coal plant jointly-owned by AEP and Buckeye Power, a 600-MW unit at FirstEnergy's Avon Lake coal plant, and the 800-MW Davis-Besse nuclear plant. Over 22% of FirstEnergy's generation was off-line and unavailable for serving the utility's customers. AEP's shortfall in generating capacity included the forced outage of its Cook Nuclear Units 1 and 2 as a result of NRC enforcement action. Before the summer began, the North American Electric Reliability Council (NERC) anticipated supply shortages in Illinois, Wisconsin, Missouri because of "ongoing outages of about 5,000 MW of nuclear generating units in Illinois." At issue is why was so much generating capacity off-line at the beginning of the summer season when power demand is the greatest. Equally important is whether each affected Midwest utility took all prudent actions to prevent this crisis from happening under the still-prevailing "obligation to serve." As of mid-July, over 9,000 MWs of nuclear capacity remain off-line in the Midwest. All of the generators that contributed to the June emergency are utility-owned and subject to traditional regulation.

- ***The risk of a tight supply situation was known going into the summer.***

Utilities and their regulators were aware of the risk weeks before the warm spell. ECAR, the regional reliability council covering all or parts of Ohio, Michigan, Indiana, West Virginia, Kentucky, and three other states, reported to the Ohio commission in early June that the region's reserve margin will be 12.4%, dropping to about 9.3% if interruptible customers are included. If the summer is hotter than normal, they said, the margin could shrink to 3 to 4%. Singled out as the cause was the extraordinary number of nuclear units that were idled. This is an extremely precarious situation in which -as it happened- one more contingency could trigger an emergency. The City of Chicago was so concerned that ComEd was unprepared for the summer that it invoked its right to inspect the utility's Crawford and Fisk generating plants to make sure they are capable of producing power on short notice.

- ***Untested, new NERC operating procedures for handling "emergencies" may have contributed to making a bad situation worse.***

In June, utilities began implementing a new "transmission loading relief" (TLR) procedure for curtailing transactions in the event of an emergency. This untested procedure was rushed into service without official approval by NERC. It replaced operating practices, such as the redispatch of generation, that some utilities and power marketers believe could have alleviated the emergency. In recent filings before the Federal Energy Regulatory Commission (FERC), some marketers are claiming that TLR was not so much used to address an impending emergency, but was used to game the situation for their own advantage. This unnecessarily limited the ability of the region to import power at the very time the imports were most needed. Whether these allegations are true or not, there was no justification for adding this new risk factor when it was widely known before the summer began that a severe supply shortage existed. The industry had a responsibility to continue using tried-and-true operating procedures for dealing with such contingencies.

- ***Wholesale power markets are not workably competitive. In the Midwest, retail-level competition is nonexistent.***

The Energy Policy Act of 1992 directed FERC to establish a competitive wholesale electric marketplace. Notwithstanding the intent of Orders 888 and 889 to implement more competitive bulk-power markets, that goal has not been fully achieved. More work needs to be done to eliminate widespread abuses and inefficiencies. There is a tremendous backlog of petitions and filings before FERC seeking new reforms and rulemakings to ensure that all market entities have truly fair and nondiscriminatory access to transmission services. This will require changes to

Orders 888 and 889, especially the operation of OASIS and the calculation and posting of ATCs.[1] Real competition in the wholesale markets ultimately requires the market interaction of retail customers. Absent from the Midwest market are the economic incentives necessary to encourage retail customers to change their demand in response to sudden changes in price which allows the market to more efficiently balance supply and demand.

RELIABILITY IN A COMPETITIVE MARKETPLACE

- ***A competitive retail market will improve reliability and deliver reliability at lower cost to consumers, but first there must be a competitive market.***

The existing regulatory regime of monopoly utilities does not provide adequate incentives to properly maintain reliability nor to do so at the lowest possible cost. In 1997, ELCON published a paper, authored by Eric Hirst of Oak Ridge National Laboratory, demonstrating several ways in which a competitive electricity marketplace could improve grid reliability at lower cost.[2] One important way for achieving this is by allowing end-use customers to respond to spot market prices of electricity. Not all customers want or need to do this, but many customers–such as large commercial and industrial consumers–will find it cost effective to reduce their loads in response to real-time market signals. However, this requires retail-level competition and the elimination of utilities' monopoly on retail sales. State regulators in Illinois are presently considering the implementation of "real-time pricing" for large commercial and industrial consumers. The intent of this program—if adopted—is to provide large customers with an economic incentive to reduce load when spot market prices are high. This proposal is an interim step to the introduction of retail competition, which has been enacted in Illinois, but not yet implemented.

- ***A competitive electricity market would remove barriers that now prevent independent power producers from constructing new capacity.***

A contributing factor to the Midwest power crisis was inadequate transmission capacity in some parts of the region. This can be solved by either building more transmission lines or building new generating facilities to relieve the congestion.[3] Generating facilities are generally easier to site, but independent power producers (IPPs) still confront substantial barriers because of utility opposition to competition. Only when utility generation is fully deregulated and open-access

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[1]ATC, or "available transfer capabilities," is Order 889's term for the amount of transmission capacity available for use under the pro forma tariffs.

[2]Eric Hirst, *Profiles on Electricity Issues: Competition Can Enhance Bulk-Power Reliability*, Nº 19, (Washington, DC: Electricity Consumers Resource Council, 1997)

[3]Utilities often resist the construction of new or upgraded transmission facilities to protect the market for their high-cost generation.

transmission policies are implemented by impartial independent system operators (ISOs) will new generating units be built to relieve transmission congestion.

- ***Deregulation of utility-owned generation can improve the reliability of those generators.***

Non-utility generators such as industrial cogeneration facilities are typically more reliable than utility-owned generators. Utilities subject to cost of service regulation, often with automatic fuel adjustment clauses, have little incentive to maximize the operating efficiencies and availabilities of their generators. The poor track record of many nuclear units is well known and clearly was a contributing factor in the Midwest crisis. But many coal-fired generating units were also off-line. Those that would argue that "deregulation" has caused the crisis, miss the point that deregulation of generation has not yet happened.

- ***Price spikes are a known risk of competitive markets.***

Pricing volatility is a natural characteristic of commodity markets. The price spikes that occurred in late June were the result of FERC's promotion of market-based pricing for wholesale transactions. Several extenuating factors needlessly produced the extremely sharp price rises that occurred briefly on June 25 and 26. First, the market is immature and imperfect. Nonetheless, the problem was self-correcting and normal prices were quickly restored. A second factor was the existence of contract terms providing for "liquidated damages" if a supplier is unable to deliver power as promised in the contract. Use of NERC TLR procedures prevented many transactions from being executed and some utilities were buying replacement power at any cost. A more fully competitive market, with a highly liquid short-term spot market, would have limited this form of panic buying. Traders in the Midwest do not now have access to the full range of resource options (including end-use customers selling options on their loads) that a more competitive market can provide. Ironically, efforts by the Commercial Practices Working Group to institute a "next-hour" spot market this summer were defeated by many transmission providers.

- ***The Midwest crisis demonstrates the urgent need for independent system operators (ISOs).***

The power crisis in June was a regional problem that needed a regional solution. The situation was clearly made worse by fragmented, piece-meal efforts to balance supply and demand. The five regional reliability councils that covered the impacted area, and the countless control areas, could not and did not coordinate their efforts to maximize power flows. Certainly the existence of a larger, regional ISO could have prevented the crisis by coordinating and requiring the redispatch of generation to increase power flows from outside the region, and more efficiently within the region. An ISO would also more judiciously limit the use of TLR to true emergency situations. ###