

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

NSTAR Services Company, )  
 )  
 Complainant )  
 )  
 v. )  
 )  
 New England Power Pool )  
 )  
 Respondent )

Docket No. EL00-83-000

**Affidavit of Peter Cramton<sup>1</sup>**

I have been asked by ISO New England, Inc. (the “ISO”) to comment on the June 23, 2000 supplemental filing by NSTAR Services Company (“NSTAR”). The filing consists of an Affidavit of Philip Hanser (the “Affidavit”) in support of NSTAR’s complaint. Specifically, the Affidavit supports the NSTAR request for a \$1,000/MWh price cap on all the New England Power Pool (“NEPOOL”) electricity markets operated by the ISO. It argues that the existing and proposed mitigation measures are inadequate in times of capacity shortage, as defined by Operating Procedure 4 (“OP 4”). It also argues that the \$1,000/MWh cap would not discourage entry into NEPOOL. The Affidavit makes some suggestions about the development of appropriate screens to identify times when the market is not workably competitive.

In this brief response, I will focus exclusively on the desirability of a \$1,000/MWh price cap in the energy market. I continue to believe that at this time such a cap should be avoided. I argue that the energy market is sufficiently insulated from the problems of the reserve markets in OP 4 that the energy market remains workably competitive. Provided the ISO’s mitigation tools are enhanced in line with recent ISO filings, a \$1,000/MWh cap on energy prices is not warranted at this time.

Mr. Hanser’s main argument for capping the energy price is that in times of capacity shortage (OP 4) the ISO must accept all bids, and hence the market is not workably competitive.<sup>2</sup> This, however, is not the case. In OP 4, the ISO must accept all reserve bids, but this does not imply that all energy bids need be accepted. Indeed, there has never been an instance, since the markets began on May 1, 1999, where all energy bids were accepted—some energy bids are always rejected. There are two reasons for this. First, only a subset of resources can provide reserves. External resources cannot provide reserves, and internal resources are limited in providing reserves by ramping capabilities. Second, energy is scheduled before reserves are designated. The reality is that in OP 4 there is a shortage of reserve bids, but there is no shortage of energy bids.

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<sup>1</sup> Peter Cramton is Professor of Economics at the University of Maryland and President of Market Design Inc. Over the last 15 years, he has conducted research on auction theory and practice. This research appears in the leading peer-reviewed economics journals. During the last 6 years, Cramton has applied this research in the design and implementation of auction markets in the U.S. and abroad. He has led the design and implementation of several high-stake auction markets in the telecommunications and electricity industries.

<sup>2</sup> Affidavit at ¶9.

Although the reserve markets suffer from well-recognized flaws, the energy market does not suffer from the same flaws. Hanser argues, “Failures in the reserve markets inevitably affect the energy market, because prices in the former establish the opportunity cost of selling into the latter and *vice versa*.”<sup>3</sup> This may be true if all quantity can be bid into both reserve and energy markets. Then in OP 4 a generator without any load obligation has an incentive to submit extremely high bids in both the reserve markets and the energy market. However, some resources can only bid in the energy market, and not all resources that can bid in both have an incentive to submit high energy bids.

Whether the energy market is insulated from OP 4 problems depends on many factors, such as:

1. Whether the OP 4 condition is known before the time of bidding.
2. The quantity of energy bids by bidders that do not have an interest in a high energy spot price (i.e., those that are short on energy in the spot market).
3. The quantity of energy bids from external resources.

When at the time of bidding it is not known whether the ISO will be in OP 4, then bidding high in both energy and reserve markets runs the risk that the unit will be selected for neither. This uncertainty about OP 4 conditions limits bids.

To determine the bidding incentives of generators in the energy market, it is essential to know whether the bidder is holding a long or short energy position going into the spot market. Most energy is transacted financially in bilateral and futures markets well before the bidding in the spot market occurs. As a result, a bidder of generating units may enter the spot energy market knowing that it is likely to be a net buyer of energy, rather than a net seller. Such a bidder has an incentive to bid low in the energy market, since the bidder benefits from a low energy price. The quantity of energy bids from bidders with a short position may be quite large. When this quantity is added to the quantity of energy bids from external sources, it is entirely possible that there will be sufficient competition in the energy market even in situations when such competition is absent in the reserve markets.

The market experience to date supports the view that the energy market can function in times of OP 4. Exhibit 1 shows the energy and reserve prices during all hours when OP 4 was in effect, since the markets began. Not surprisingly, prices are unusually high in these periods of capacity deficiency. There are several instances when reserve prices exceeded or were capped at the energy price. Most importantly, the \$6,000/MWh energy price on May 8, 2000, stands out as an outlier, one that would have been eliminated by the ISO’s proposed mitigation measures.

Certainly, the energy market is tested in times of insufficient reserves. Strong mitigation tools are essential. The ISO either has or has proposed such tools. I believe that these mitigation tools should be sufficient to maintain workably competitive prices without resorting to a fixed-dollar price cap. If the tools, both existing and proposed, are not available to the ISO, then I would recommend a temporary price cap in the energy market until further progress in both the market structure and market rules is made. However, at this time I continue to believe that a fixed-dollar price cap in the energy market can be avoided.

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<sup>3</sup> Affidavit at ¶5.

**Attestation**

I am the witness identified in the foregoing affidavit. I have read the affidavit and am familiar with its contents. The facts set forth therein are true to the best of my knowledge, information, and belief.

Peter Cramton

June 30, 2000

Subscribed and sworn to before me  
this 30th day of June, 2000.

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Notary Public

My commission expires: \_\_\_\_\_