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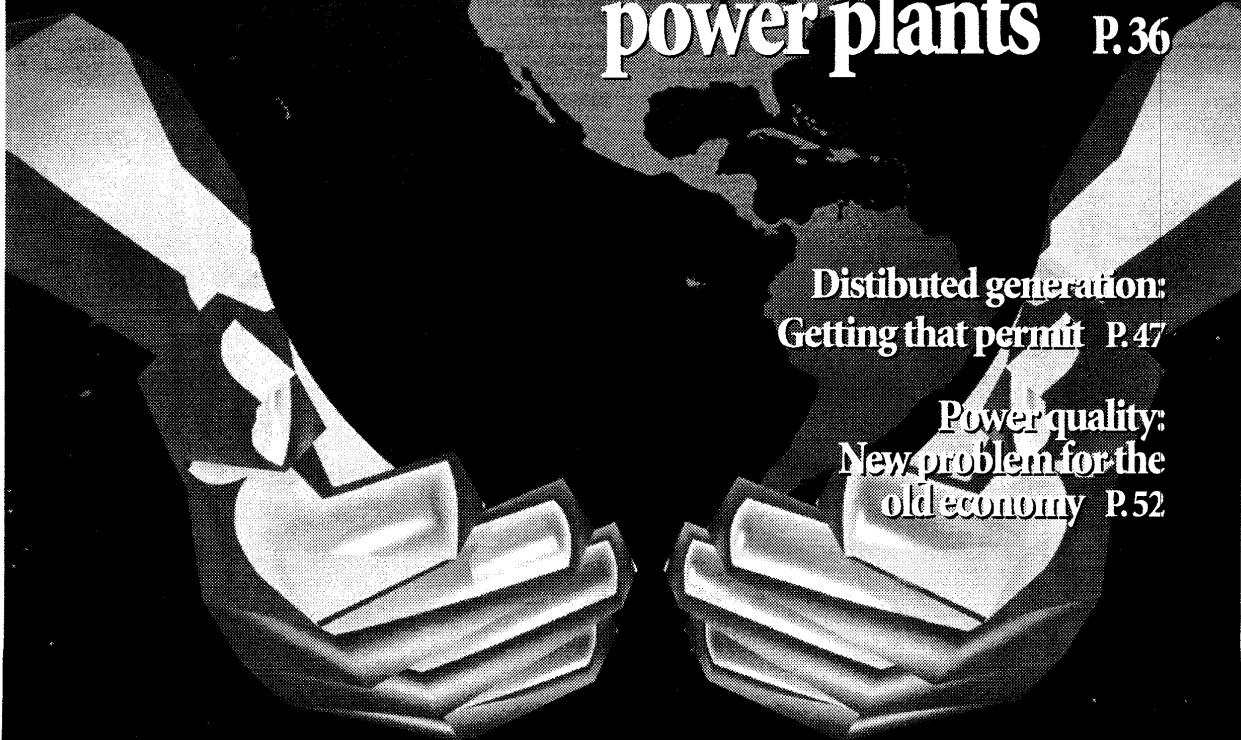
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Letter to the Governor: What Oregon Should Know About the ISO

When California cries “wolf,” will its neighbors cower like sheep?

By Robert McCullough

THE FEDERAL ENERGY REGULATORY

Commission’s Dec. 15 order proposing remedies for calming runaway prices in the western power markets was largely disconnected from the ongoing crisis. Since the passage of AB-1890, California has attempted to apply various theoretical beliefs to a very real market.

The result has been like an aspiring dentist learning his trade from a mail-order handbook—good intentions, but lousy results. Unfortunately, FERC also has attempted to apply social engineering theories to real markets. The result, amply shown in this order, has been to cancel the parts of the experiment that do not agree with FERC’s beliefs, without really focusing on the underlying problems.

Now the Pacific Northwest has become an unwilling player in this drama. Forced in December, along with other western power companies, to sell electricity to California’s utilities on credit, Northwestern generators find themselves sharing the pain. Not only must they jeopardize the region’s reliability by sharing their scarce winter supplies, but by federal order, they have accepted soft-capped wholesale prices they may never be able to collect. The cruel irony is that California probably would not need to rely on imports from the Northwest if its system matching supply and demand were operating efficiently.

The FERC’s plan for fixing the predicament is doomed

because it fails to address the root problem—the California Independent System Operator’s inability to accurately assess available capacity in the state. Instead, what’s needed in California is a new approach that provides the proper incentives for generation, rather than financial rewards for under-scheduling.

EDITOR’S NOTE: The author prepared this analysis to assist Oregon Gov. John A. Kitzhaber, M.D., in his efforts to create a regional plan to address the power crisis in the West. In his Dec. 14 letter to Energy Secretary Bill Richardson, Gov. Kitzhaber calls for an energy summit among the region’s stakeholders.

“If no region-wide action is taken soon, the situation threatens to escalate such that the whole West may be short of power ...,” he warns in the letter. “For these reasons I urge you and Mr. Hoecker, the Chairman of the Federal Energy Regulatory Commission, to convene a forum in this region to discuss with the western states what can be done to lay the groundwork for a much needed integrated strategy to resolve this crisis.”

The text of the letter may be viewed at www.governor.state.or.us/governor/press/p001214a.htm.

Questionable "Emergencies"

The real problem is that the California Independent System Operator, and to a lesser extent, the Power Exchange, created an environment where massively inefficient behavior has become a common reaction to irrational incentives. (See McCullough, "Price Spike Tsunami: How Market Power Soaked California," *Public Utilities Fortnightly*, Jan. 1, 2001, p. 22.) Since May 22, the ISO has declared 49 Stage 1, 32 Stage 2, and one Stage 3 emergencies.¹ Compared to a normal emergency criteria of one emergency in 20 years, the ISO was averaging one emergency every four days as of the end of 2000.

The correlation between ISO emergencies and actual operational problems is not easy to determine. The ISO's ineffectual policies for reserve procurement—passive waiting for daily bids, followed by frenzied buying when the bids prove insufficient—mean that the ISO can find itself in an emergency even when no real shortage occurs. Through July, during the first 19 emergencies, even the ISO agrees that it averaged a reserve margin in the 30 percent range. The most recent emergencies have occurred in November (when the ISO had a reserve margin of 43 percent) and December (when the reserve margin dipped to 39 percent). Complicating the problem is a decision by the ISO management to treat its situation primarily as a political one. ISO reporting of the facts has diminished markedly. Most everyday operational data has been made secret and even historical aggregate information has been denied to the California Public Utilities Commission and other agencies.

The market results are striking. ISO emergency purchases are an enormous windfall to generators. ISO emergencies are so remunerative that the prices into the PX immediately increase on the prospect of a power shortfall. Substantial evidence suggests that the ISO has little understanding of its actual requirements. Real generation during ISO emergencies within its service territory is at surprisingly low levels during the emergency. Moreover, during the emergencies this summer, generation within the ISO actually fell during the emergency. The logical interpretation of this strange behavior is that the ISO easily is maneuvered into an emergency, and then forced to back down its own generation to accommodate its emergency purchases.

Since Nov. 13 the ISO's inability to purchase reserves has caused it to declare 17 Stage 1, 15 Stage 2, and one Stage 3 emergencies. The situation in November and December has been very different than that during the summer. Fundamentally, the summer's emergencies all appeared to be illusionary—substantial resources clearly were available and readily found once emergency pricing was announced. During the winter, the ability of the Pacific Northwest to

replace power resources offline due to counter-productive incentives is limited. Through September, the ISO's problems were economic—regional consumers simply were overcharged. Since Nov. 13, the ISO has been drafting scarce Pacific Northwest power supplies to cover its largely economic problems. That has real risks for the environment and—if January flows aren't sufficient—reliability.

The ISO has continued to be secretive about its real operational problems. Careful analysis indicates that it has exhausted its reserve margins of 43 percent and 39 percent in two ways: First, ISO management failed to schedule planned outages; second, they are operating as if the reported 40 percent to 50 percent forced outages among their natural gas-fired units reflect true breakdowns.² Since ISO methodology for ascertaining forced outages is poor and no real penalties are assessed for outages (actually the incentives are structured to reward extended outages, in most cases), there is a real likelihood that many of the outages are feigned.

The ISO's ability to manage this situation is limited. The ISO has adopted a confusing and misleading terminology, and attached literally hundreds of thousands of pages of rules, regulations, contracts, protocols, and policies to its operations. Its internal process is so daunting that few understand how the system actually works. Its board is largely ceremonial and chaired by the generators who have the most to gain by the perpetuation of the crisis. Not surprisingly, since virtually no one understands how the ISO is working, almost all attention has focused on price caps as a management tool. This bizarrely complex institution has been governed, since May 22, by limiting the price paid during non-emergency periods, since caps do not apply to purchases made outside the ISO during the increasingly frequent emergency periods. The use of caps as a primary market management tool has made actual operations increasingly strange. During many periods, California generators scheduled their resources north—out of the range of the caps—and allowed the ISO to import the same energy back to California.

**California would not
need to rely on imports
if its ISO were operating
efficiently.**

News Analysis

Simply stated, we are facing a series of dubious capacity crises that are exhausting our limited energy resources while major resources in California remain underdispatched.

Remedies Off Target

FERC's order primarily focuses on making changes at the California Power Exchange, while preserving the ISO. Though this reflects FERC's beliefs that the ISO concept is a good one for assuring wholesale open access, the proposed changes are in profound error since most of our problems have been with the ISO's failures, not the Power Exchange.

The first element of the FERC order is the elimination of the requirement that Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric (Sempra) purchase their requirements from the California Power Exchange. This change likely will improve the stability of western power markets in the long run. A central philosophy of Assembly Bill 1890 (California's restructuring law) is that power purchasing was passive—buyers had to wait until sellers brought supplies to the two California state agencies. This unnatural arrangement, once combined with the massive complexity of submitting a bid to the PX, often created severe shortages in the Power Exchange. Now that the three investor-owned utilities have been released to make normal power purchasing arrangements, it is likely that one of the more bizarre symptoms of the summer's operations—underscheduling—will be reduced.³ Elimination of the must-buy rule also will make explicit collusion more difficult. The mechanics of the PX often resulted in all of the available suppliers instantly raising their bids to the PX—creating sudden surges in prices. In a real market, such coordinated supplies are vastly more easy to identify.

**Passive waiting—
followed by frenzied
buying—can draw the
ISO into an emergency
even when no real
shortage exists.**

Second, FERC has released the three IOUs from the obligation to sell their remaining resources to the Power Exchange.⁴ This sale largely was illusory, since the IOUs purchased the same energy back at the price they had just been paid for it. While this part of the FERC order is more appearance than substance, its impact, in combination with the release of the IOUs from the must-buy rule, effectively ends the Power Exchange as an institution.

FERC has sealed the PX's demise with the termination of its wholesale rate schedules by April 1. None of these orders is likely to affect power prices or supplies in the short run.

Third, FERC has taken a very odd step in unilaterally assuring the three California IOUs that 74 mills is a prudent price to be paid for wholesale energy. Although the order traces the origin of the 74 mills on p. 27, the fact is that this number simply approves the current five-year strip price. In effect, FERC has provided prior approval to the California utilities for purchases at the current distorted prices. This has a very strong deleterious effect on the Pacific Northwest because the Bonneville Power Administration has announced its intention to purchase 3,254 megawatts from the same markets. BPA had forecasted a price of 40 mills. This purchase will not compete with California's "pre-approved" purchase at 74 mills. The probable cost impact on BPA is an additional revenue requirement of \$1.68 billion per year—an implied rate increase of 68 percent over BPA's currently announced rate levels.

Fourth, FERC has moved the "penalty" for unbalanced schedules from the ISO back to the three IOUs. This is a curious step. The IOUs now must correctly forecast their loads for the ISO within a 5 percent margin. Since load forecasting was never a real problem in California, this simply eliminates the ability of the IOUs to eliminate the supply/demand balance in the defunct Power Exchange. Like the elimination of the requirement to sell resources to the PX and then buy them back at the same price, this order seems to lack real substance.

The discussion of this order on pp. 28 and 29 indicates that the FERC commissioners simply may have become confused about the source of the gap between supply and demand that has occurred in the Power Exchange. Though this penalty certainly will help assure that the IOUs forecast their loads with precision, it doesn't do anything to assure that the California generators will provide capacity to the IOUs. So long as emergency prices are higher than real market prices, withholding is still a logical outcome.⁵ Various parts of the order seem in conflict.

Fifth, FERC has announced "real time mitigation and price monitoring" for transactions above \$150. Details will be

released later, after a technical conference. This phrase appears to be empty of content. Later in the order, FERC clarifies that it means this to be the elimination of the must-buy rule, a requirement for balanced schedules from the IOUs, and a "soft cap" of \$150, plus increased reporting for high-priced transactions. It is unclear whether this is a solution or simply a recap of several other components of the order. In the interim, FERC apparently will look at every high-priced transaction.

Sixth, FERC has approved yet another cap. This cap, \$150, covers payments in the ISO's markets. If prices are higher, only the bidder will receive the higher price—the transaction will not be used to benchmark the other bidder's transactions.

Frankly, it is hard to see how this cap really changes current practice. ISO emergency purchases always have followed a "soft cap" rule. The new rule would seem identical to the old, except that the price for non-emergency purchases is lower. That, of course, increases the incentive for California generators to withdraw from the ISO's standard markets and wait for the next emergency. And, of course, withdrawal makes the next emergency far, far more likely.

Seventh, FERC has eliminated the current dysfunctional ISO board and directed discussions for the selection of a new board. On Jan. 29, the board becomes advisory and all authority is vested in the current ISO management. Since the ISO management clearly has been part of the problem, the interim period until an effective board is appointed is not likely to improve matters. Interestingly, FERC has dropped its plan to also fire the Power Exchange board. It seems logical to assume that this reflects the agency's elimination of the Power Exchange as a viable entity, rather than a vote of confidence in the PX board.

Overall, FERC's big guns have spoken, but their marksmanship has been very poor. Of the order's seven components, none seems useful in the current troubled environment.

A Role for the Pacific Northwest

We need to augment the weak FERC response with effective short- and long-term recommendations. Most of all, we need to change the incentives in California to reward generation. We also need to encourage the ISO to adopt a more businesslike approach to its operations.

In the short-term, we must take actions to better balance supply and demand in a more transparent market:

1. APPOINT A NEW ISO BOARD.
2. DISCLOSE OPERATIONAL DATA.
3. ALLOW FUEL-NEUTRAL EMERGENCY PURCHASES.
4. ENFORCE RMR CONTRACTS.
5. ALLOW CAPACITY EXCHANGE.

First, if the Pacific Northwest is to rescue California

during the current period we need the new board implemented immediately with at least two Pacific Northwest members. The members need to be operational, rather than political, appointments. We have two experienced executives available immediately: Walt Pollock, who has hydro experience as the BPA power manager and thermal experience as the PGE power manager; and Dennis Steinberg, who has many years of executive experience with Pacific power operations. It needs to be stressed that the ISO does not remotely meet traditional utility management standards. Hands on, experienced supervision is needed immediately.⁶

Next, the ISO must begin to make operational data available so that the severity of its problems can be impartially established. Mysterious plant outages and illusory cold snaps must be replaced with dependable current system data.⁷ Bluntly put, the ISO must establish the existence of the threat before crying wolf. The ISO's desire to classify data in order to protect generators must be compared against reality. Much of the data the agency is hiding is readily available from other sources (albeit with lags) or has no competitive implications.

Third, all emergency operations for California need to be at least energy neutral. Clearly, neither FERC nor the ISO understand that emergency purchases (and especially purchases required by the secretary of energy) disrupt actual hydro operations and reliability.

Fourth, the ISO must begin to enforce reliability/must-run (RMR) contracts.⁸ If RMR resources are to be used as peakers, they should be used first and not backed down to balance emergency purchases. Outages at RMR resources need to be penalized—not rewarded.

Finally, California should adopt Portland General's "capacity exchange" program. All indications are that interruptible programs in California are of minor importance. Also, reports have surfaced that less load is interruptible now than was interruptible last summer. Again, California's customers should have the same opportunity to curtail as those in other regions. California's lack of real customer access has moved almost all of the pain (and reward) of curtailment to the Pacific Northwest. Specific attention should be paid to the damages suffered by customers of Pacific, Portland General, and Puget Sound, who have curtailed during this crisis by being forced out of business; specific reimbursement by California for those curtailments should be considered.

In the long-term, we need to take bigger actions to restructure California's wholesale power market:

1. ELIMINATE DAILY PURCHASE OF RESERVES.
2. ELIMINATE ARBITRARY PRICE CAPS.
3. STREAMLINE ISO OPERATIONS.
4. CORRECT THE ISO'S BASIC MISSION.

News Analysis

The practice of purchasing reserves daily simply has failed. Morally equivalent to the purchase of fire insurance only after the house is burning, it provides an incentive for generators to cause emergencies—not to solve them. The ISO should purchase reserves on a yearly (preferably multi-year) basis like all other control areas.

Secondly, we need to eliminate arbitrary price caps. One problem we have is the strange dispatch of California plants due to the price caps themselves. Once the incentives are corrected, the price caps are irrelevant. In the current situation, elimination of price caps that prevent cost-based recovery is very inefficient.

Third, the ISO has too many cooks in its kitchen. Even their own management audits show that their procedures are not well implemented. The ISO needs to replace the massive explosion of studies with experienced management—presumably from diversified systems.

Lastly, the ISO has adopted a policy of saving the West Coast from emergencies that are not even apparent to systems operating within the ISO. The ISO operates without reference

to cost or a clear accountability. The dubious emergencies of the early summer never have been explained or justified. ISO costs are simply rubber stamped through to final consumers. Without accountability, the frequent emergencies have a feeling of self-aggrandizement without a fundamental commitment to the welfare of society. In a sense, we have hired a lifeguard and paid them by the rescue—regardless of whether any swimmers were ever in risk of drowning.

Traditional integrated utilities have checks and balances that place customer service above illusory fears. The ISO needs to be made accountable to customers, not financial interests or theoretical experiments. ■

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FERC's Plea for Regional Cooperation

Hoecker tells the West to close ranks, or he will do it himself.

"CALIFORNIA IS, PERHAPS UNDERSTANDABLY, CRIFE WITH TALK OF ELECTRICAL SECESSIONISM. Having devised a unique market structure by statute, it once again wants to go it alone. ... Even after years of relying on generators elsewhere in the region, California has developed an antipathy to out-of-state generators ... and, it wishes any wholesale market institution like the California ISO to be "politically accountable" to the State.


"SURPRISINGLY, THE IMPORTANCE OF [REGIONAL COOPERATION] HAS BEEN VIRTUALLY IGNORED. In a region as vast and highly integrated electrically as the West, rapid development of a viable regional transmission organization [RTO] will be crucial to restoring trust. ...

"THERE IS SIMPLY NO MORE COMPELLING CASE TO BE MADE for RTOs and region-wide coordination of transmission network operations than what has happened in Western power markets in the past eight months. ... Clearly, this Commission has not impressed

upon the West, upon California, or upon the Congress the importance of Order No. 2000 [encouraging RTOs]. The California ISO is due to file an RTO application under the Order soon and I doubt it will find time to do so. ... Therefore, I strongly recommend that [we] mandate a West-wide RTO and publish its own requirements and timetable for achieving that end, first by commanding three sub-regional RTOs ... and to address immediately the most critical "seams" issues relating to operational compatibility, pricing, and reliability across their borders.

"WESTERN POLICYMAKERS MUST FORM RANKS under the still-inchoate Western Interstate Organization or the regional regulatory organizations (i.e., RTOs) I have proposed ... as an effective new way to coordinate state and federal oversight ... the time has clearly come. ..."

—FERC Chairman James Hoecker, Jan. 4, 2001 (excerpts from concurring opinion to FERC's Dec. 15 order on remedies for California wholesale electric markets)

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- 1 ISO terminology is complex and often misleading. A Stage 1 emergency occurs when the ISO does not meet its own reserve criteria. Stage 2 occurs when it cannot meet a 5 percent reserve margin. A Stage 3 takes place when it cannot meet a 1.5 percent reserve margin. An ISO emergency can take place even when local resources are available—so long as they have not been bid into its daily reserve purchasing.
 - 2 Although the ISO has defended the poor operation of the units within its service territory, the simple fact is that these are standard units that have been in operation for many years. We would expect forced outage rates in the 5 percent area. Evidence from the ISO, as well as material from FERC, indicates that they units have averaged a 20 percent outage rate since May 22.
 - 3 Since the ISO interprets a failure of the Power Exchange to match demand with sufficient supply as a capacity problem, the gap between supply and demand was treated as a load excursion or a plant outage. During many periods this summer, the gap between demand and supply at the ISO was as high as 30 percent of total requirements.
 - 4 Editor's Note: The FERC touted its Dec. 15 order for returning control to the California PUC of some 25,000 MW of in-state, utility-owned generating resources, so that Southern California Edison and PG&E could use those plants to serve their own native load under cost-based regulation, without selling the capacity through the PX. However, in his concurring opinion issued Jan. 4 (see sidebar), FERC Chairman Hoecker said, "To date, California's major utilities are still selling electricity output and purchasing their requirements through the PX and ISO spot market, contrary to the [FERC's] order."
 - 5 Various parts of the FERC order seem in conflict here. A literal reading indicates that the load forecast must be precise. Later, on p. 24, the order states "Second, we proposed that California market participants preschedule all resources and loads with the ISO and to limit their real-time energy purchases from the ISO to no more than 5 percent of their total load." While this makes more sense, it simply moves the real-time scheduling from the ISO to the IOUs. This issue needs to be clarified.
 - 6 Even the most cursory review of ISO operations reveals amazing failures to manage day-to-day issues. ISO data shows that it has served almost 1,000 megawatts more load than it has generated in 2000. This almost certainly reflects a problem with data (ISO data collection appears fragmentary at best), but this type of slapdash management would not be tolerated in any other environment.
 - 7 In November the ISO blamed its operating problems on a drought in Northern California, unseasonably low temperatures in the Pacific Northwest, and plant outages. Neither the drought nor the unseasonable temperatures actually existed. The plant outages still are unverified.
 - 8 As with many ISO phrases, the meaning of RMR is obscured by the ISO's unique terminology. RMR resources are capacity resources—theoretically under the direct control of the ISO dispatchers. In practice, RMR resources often are not used efficiently, or often, not used at all.

