RTO Insider

Your Eyes and Ears on the Organized Electric Markets

CAISO ■ ERCOT ■ ISO-NE ■ MISO ■ NYISO ■ PJM ■ SPP

ISSN 2377-8016 : Volume 2016/Issue 22 June 7, 2016

Lessons Unlearned: FERC's Punt on Market Monitors' Independence

After allegations of management interference led PJM to replace its internal market monitoring unit with an independent monitor in 2008, FERC had an opportunity to prohibit other RTOs from using the internal structure. Because it chose not to do so, the temptation for RTO officials to muzzle their MMUs still exists.

SPP MMU Struggles to Find its Voice

Second in a Series

By Tom Kleckner and Rich Heidorn Jr.

LITTLE ROCK, Ark. — Alan McQueen, head of the SPP internal Market Monitoring Unit, says the best evidence of the MMU's independence is in the filings it has made to FERC staking out positions contrary to the RTO and market participants.

"The proof is in … our record," he said. "And that's what's important."

The record shows that until the last 18 months, the MMU generally filed only testimony packaged with RTO filings. Since then, it has filed comments opining on SPP filings or policies in nine dockets: six times siding with the RTO and three times proposing different rules. FERC sided with the MMU in two of the three challenges.

Catherine Mooney and John Hyatt, formerly two of McQueen's three direct reports, say that the three challenges were exceptions and that McQueen discouraged them from opposing positions held by SPP and its stakeholders. Hyatt and Mooney, who were fired in December, say they were dismissed for resisting pressure to conform to policy positions of SPP management and members. (See Part 1: SPP Squelching MMU Independence, Former Monitors Say.)

Half-Hearted Opposition

Mooney said that while the MMU would often disagree with RTO proposals at Market Working Group meetings — where market-design revisions are hashed out — it would drop its opposition if members

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IMMs Wouldn't Have It Any Other Way

By Rich Heidorn Jr.

Bowring

Patton

Joe Bowring and David Patton often disagree, as anyone who has watched a FERC technical conference featuring the two independent market monitors can attest.

But while the two — both Ph.D. economists — may clash over seams issues or the virtues of forward capacity markets, they are 100% in agreement on the need for independence in market monitoring.

"I don't know how we would do this job effectively if we weren't independent," said Patton, whose Potomac Economics provides market

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CAISO Floats Latest Cost Allocation Plan for Expanded Balancing Area

By Robert Mullin

CAISO is nearing completion of a proposal describing how the ISO would allocate the costs of building and operating transmission assets in an expanded balancing authority that could encompass areas of the West outside California.

The ISO considers development of a new transmission access charge (TAC) plan to be "a central policy element" of expanding into a region with dozens of balancing areas subject to multiple state and municipal rules determining compensation for transmission owners.

Most pressing for CAISO: Development of new TAC options is essential for enabling

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Subscription Rates:

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Annual:	$1,175.00	$1,425.00
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FERC's Punt on Market Monitors' Independence

SPP MMU Struggles to Find its Voice

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approved them, despite its responsibility to notify the commission of such disagreements.

The former monitors say SPP's FERC filings started only after commission staff questioned whether the MMU was fulfilling its obligations.

"It became clear to us that FERC expected us to file," she said. "Until late 2014, we had not been doing it." A FERC audit that began in April 2015 brought increased scrutiny.

FERC detailed its expectations of MMUs when it issued Order 719 in 2008. "We do expect the MMU to advise the commission, the RTO or ISO, and other interested entities of its views regarding any needed rule and tariff changes," the commission said. "Likewise, in the event an RTO or ISO files for a proposed tariff change with which the MMU disagrees, we expect the RTO or ISO to inform the commission of that disagreement, although not necessarily to include a written MMU proposal with its filing." (See *Order 719: FERC Balanced MMU Independence Against RTO Autonomy*.)

SPP spokesman Dustin Smith said the increase in MMU filings was the natural result of SPP's developing, and more complex, markets.

"I think it is important to note that SPP did not have a day-ahead market until March of 2014. Prior to March 2014, SPP operated its [Energy Imbalance Service] market, which had a much more simple structure than SPP's new Integrated Marketplace. The nature of developing market rules for a new marketplace necessitates more filings than does operating the more simple EIS market. The number and frequency of filings has less to do with time and more to do with the type of market SPP operates."

However, FERC records show that SPP made its first Tariff filing on the marketplace in February 2012 (ER12-1179), more than two years before the MMU began commenting separately in FERC dockets. SPP records show the MMU began attending Market Working Group discussions on the development of the marketplace in September 2009.

Surprising Admission

FERC records show that the first listing of the MMU as the author of a substantive policy filing was in December 2014, when it requested rehearing of a September 2013 commission order requiring the removal of its market impact test from the MMU's monitoring for physical withholding. The MMU said eliminating the test would "produce excessive false positive screen failures for the MMU to analyze" (ER15-21).

The December filing, which was signed by Mooney and Hyatt, included a surprising admission: The MMU had delayed raising the issue for more than a year after FERC's order.

"We apologize for the delay in raising this to the commission's attention," they wrote. "In 2013 and early 2014, SPP's staff maintained a focus on supporting the effort to launch the Integrated Marketplace by

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Corrections

Last week's newsletter incorrectly reported that Shell Energy North America did not file a brief in response to a FERC administrative law judge ruling concerning the Western Energy crisis. Shell submitted a brief before the May 27 deadline contesting the ALJ's ruling that *Mobile-Sierra* protections were both "avoided" and "overcome" in the company's contract with the California Department of Water Resources. (See *Iberdrola, Shell Dispute FERC ALJ Ruling on Energy Crisis Supply Contracts*.)

The May 17 edition of *RTO Insider* incorrectly reported that California's goal to reduce 2050 greenhouse gas emissions to 80% below 1990 was the product of state legislation. That target was in fact established by a 2005 executive order from Gov. Arnold Schwarzenegger and reinforced last year by Gov. Jerry Brown's order to achieve a 40% reduction by 2030. (See *Integrated Resource Planning on the Horizon for Calif*.)

CAISO NEWS

CAISO Floats Latest Cost Allocation Plan for Expanded Balancing Area

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Portland-based PacifiCorp to join an expanded system as early as next year.

'Postage Stamp' Rate

CAISO Principal of Market Infrastructure and Policy Lorenzo Kristov summed up the issue during a June 1 conference call to discuss the issue with Western industry participants: "The conversation we're having here is — when you add new customers [to the ISO] — who would be paying for the service charge."

CAISO currently uses a regional "postage stamp" rate to recover transmission revenue requirements for all ISO-controlled facilities rated at 200 kV or above. All internal load and exports are subject to per-megawatt-hour usage charges to fund those facilities.

Facilities rated below 200 kV and located inside the service territory of a participating transmission owner are covered by "local" rates paid by load within that territory. CAISO's primary participating TOs are California's three investor-owned utilities: Pacific Gas and Electric, Southern California Edison and San Diego Gas and Electric.

CAISO market participants are charged for transmission access based only on the regional or local criteria.

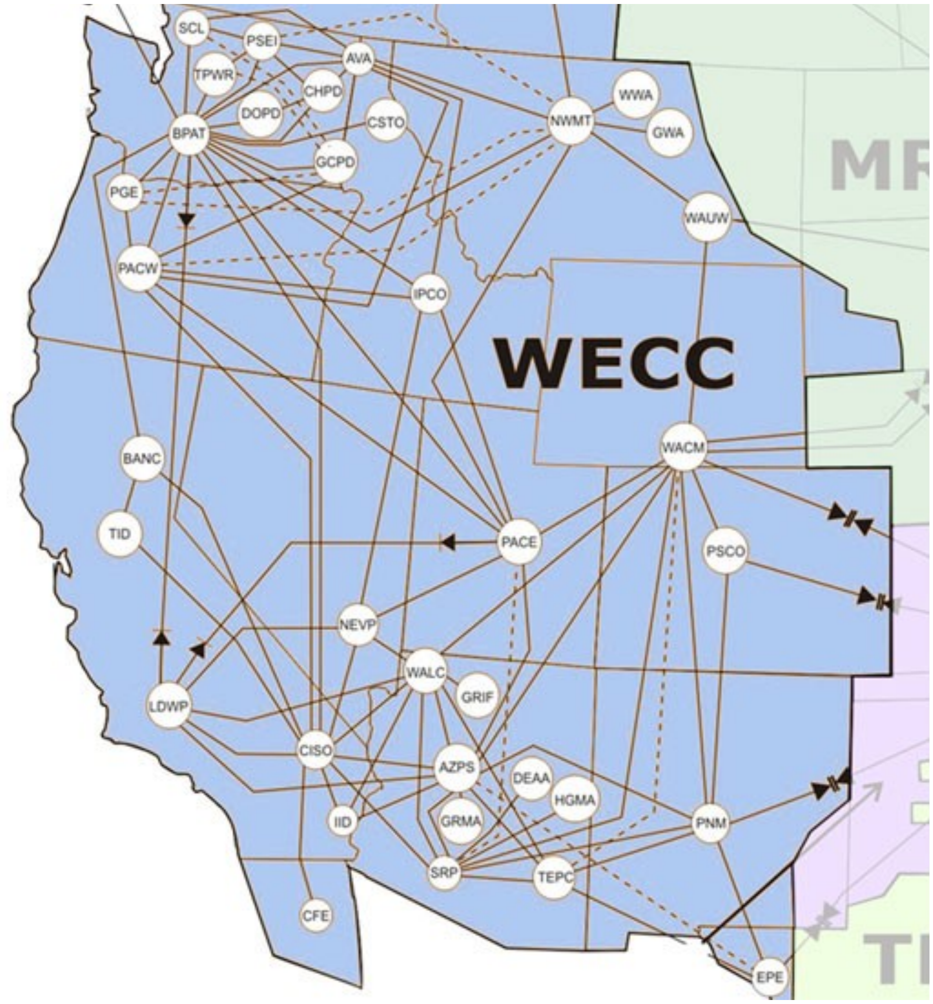
The current TAC makes no distinctions among projects driven by economic, public policy or reliability considerations, nor does it factor in-service dates or other non-voltage criteria.

"We've determined that the structure does need to be changed with an expansion," Kristov said.

New 'Sub-Regional' Category

CAISO proposes to retain the category of regional — or ISO-wide — projects eligible for broad-based allocation, albeit in an altered format. At the same time, the ISO would introduce a new sub-regional category to accommodate TOs joining what could become a Western RTO in the future.

Under the latest TAC proposal, revenues for existing transmission facilities would only be eligible for recovery under "license plate" rates specific to each sub-region.



CAISO's potential expansion into the West is forcing the ISO to reconsider how it would allocate transmission costs across the region currently divided into multiple balancing areas. *Source: EIA*

The upside for current CAISO members: They would not be charged for projects already operating in a new member's service territory.

The downside: The sub-regional identification would also apply to CAISO's current balancing area, meaning new members would not be assessed charges for California's existing network.

The only projects eligible for regional cost allocation would be regional facilities approved under a new transmission planning process for an expanded ISO. To be considered for ISO-wide allocation, a proposed facility would be required to meet at least one of three criteria:

- Having a voltage rating above 200 kV;
- Facilitating interconnection — or increasing interconnection capacity — between two sub-regions; or
- Creating, increasing or supporting the increase of intertie capacity between the expanded balancing area and a neighboring area.

Project Types

The TAC proposal would also introduce into the Tariff the practice of differentiating among different project types. For example, the new rules would make explicit that facilities approved to meet a reliability need within a sub-region would be allocated solely to that sub-region.

Economic and policy-driven projects would

Continued on page 4

CAISO NEWS

FERC Approves CAISO's Aliso Canyon Response Plan Ahead of Summer

By Robert Mullin

FERC on Wednesday approved CAISO's plan to temporarily alter its market rules and operations in response to natural gas pipeline restrictions stemming from the closure of the Aliso Canyon storage facility (ER16-1649).

The grid operator last month sought expedited approval for the Tariff changes, designed to ensure reliable operations in Southern California in the face of potential gas shortages this summer — the region's peak period for power generation. (See CAISO Board Approves Aliso Canyon Response.)

The commission also directed staff to convene a technical conference to evaluate the effectiveness of the provisions and determine the need for additional longer-term measures, addressing a concern of a number of CAISO stakeholders.

"Substantial efforts have been made by CAISO, California regulators and the energy companies to enhance planning and preparation, communication and coordination and situational awareness," FERC Chairman Norman Bay said in a statement. "That being said, the situation remains a serious one, and we will continue to monitor Aliso Canyon very carefully."

Under new pipeline requirements effective June 1, Southern California Gas customers face penalties as high as 150% of daily gas indices when their daily burn deviates from nominated flows by more than 5%. The region's generators have complained they would likely incur financial losses when the ISO's real-time dispatch instructions cause them to burn more or less gas than planned for on a given operating day.

The new market rules will help generators manage their burns to avoid system-balancing penalties and allow them to recover costs after the fact, while ensuring the ISO is capable of moving generation into the region when gas supplies are constrained.

Key provisions of the plan include:

- The release of advisory schedules by CAISO two days ahead of an operating day to help scheduling coordinators plan for gas procurement further in advance;
- Inclusion of a gas adder and an after-the-fact cost recovery mechanism for generators connected to the SoCalGas system, allowing those units to recover costs based on same-day gas prices — including potential penalties — rather than day-ahead gas indices;
- Implementation of a new constraint in the CAISO market that limits the minimum and maximum amount of gas that can be burned by generators in the affected area during periods of restricted gas supply;
- Reservation of transmission capability on the Path 26 transmission line linking the Pacific Gas and Electric (PG&E) and Southern California Edison service territories in order to ensure adequate capacity to deliver energy into the southern part of the state during gas restrictions; and
- Suspension of virtual bidding in circumstances when CAISO determines the practice could produce market inefficiencies.

FERC rejected a request by NV Energy and Calpine for CAISO to develop a gas adder for generators located outside the SoCalGas network. The two companies contended that limited gas supplies in that system would likely drive up fuel prices in neighboring areas. The commission instead determined that the adders are designed to specifically address the conditions confronted by Southern California gas-fired generators, which "need a mechanism by which to manage gas-balancing requirements within tightened tolerance bands."

"This is not the case with resources outside of Southern California," the commission said.

The commission also rejected PG&E's request that the ISO perform a market simulation before rolling out the plan, saying that "timely implementation of these market changes outweigh the potential benefits of requiring market simulation in this instance."

The commissioners additionally declined a request by NRG Energy that CAISO be ordered to implement long-term changes to its market rules related to gas cost recovery by Dec. 1, 2016. During stakeholder calls earlier this year, the company repeatedly raised concerns about its exposure to increased gas costs and balancing penalties.

"We find that it is premature to require CAISO to implement long-term changes by a date certain when the scope and duration of any potential problems are currently unknown," the commission said, adding that those measures should be addressed in the upcoming technical conference.

CAISO Floats Latest Cost Allocation Plan for Expanded Balancing Area

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receive different — and more complex — treatment. Decisions regarding construction and cost allocation for those projects would be left to a new body of state regulators created in concert with the integration of a new TO into the ISO — an idea modeled on similar structures in ISO-NE and MISO.

"We know from precedent that agreement among the parties for cost allocation is important for FERC approval," Kristov said.

CAISO is also considering additional provisions that would allow the expanded system to charge new TOs for costs of new regional facilities previously approved under the expanded transmission planning process. It would recalculate the subregional cost-benefit shares for those facilities at least every five years.

The ISO must also determine a regionwide export rate — or wheeling access charge — and develop FERC-required backstop provisions for approving and allocating costs for economic- and policy-driven projects.

"I just want to acknowledge that a lot in this proposal is not complete," Kristov said.

Still, a draft final proposal for TAC options is slated to be released June 28. CAISO staff plans to present the plan to the ISO's Board of Governors on Aug. 31.

Comments on the most recent proposal must be submitted to the ISO by June 10.

ERCOT NEWS

ERCOT to Keep NRG's Greens Bayou Plant Running for Summer

By Tom Kleckner

ERCOT said Friday it has executed a reliability-must-run (RMR) agreement to keep a 371-MW natural gas-fired generator available through September, with the likelihood of extending the contract through June 2018.

NRG Texas Power's Greens Bayou Unit 5 was to be mothballed June 27. However, it will now be made available to the ERCOT market from June 1 through September. Under the RMR agreement's terms, ERCOT will make a standby payment to NRG of \$3,185/hour during on-peak hours, regardless of whether the unit runs.

ERCOT said the agreement will ensure transmission stability in the Houston region. The ISO said last month it has enough generating capacity to meet its expected demand into the next decade, even with NRG's announcement it would mothball

Greens Bayou. (See "ERCOT Reports Show Ample Capacity into Next Decade," ERCOT Briefs: Ample Capacity; Outage Procedures.)

The Texas grid operator will ask its Board of Directors to approve an extension to the agreement for the summer of 2017 and June 2018 during its June 14 board meeting. If the board rejects the extension, the RMR agreement will expire May 31, 2017.

The ISO said it expects the \$590 million Houston Import Project, which will improve the region's ability to draw power from elsewhere in Texas, to be completed by the 2018 summer peak. The RMR agreement does not include off-peak periods (October through May) because planning studies do not indicate Houston-regional reliability violations during that period.

The RMR agreement is ERCOT's first since 2011. It has executed 73 other agreements since 2002, most of which were for transmission stability. Four RMR agreements in 2011 returned mothballed units to service because of anticipated generation shortages during that summer's peak demand period.

Greens Bayou 5 is the largest of seven units at the Harris County complex. Built in 1973, it was mothballed in 2010 and 2011, but returned afterward.

ISO-NE News

Court Dismisses Forest Society Complaint vs. Northern Pass

By William Opalka

A New Hampshire court has dismissed a complaint by a conservation organization seeking to block development of land alongside a state highway needed to bury a section of the Northern Pass transmission line.

The Coos Superior Court said the Society for the Protection of New Hampshire Forests cannot deny access to project developers in its attempt to halt the line, saying the decision ultimately rests with state transportation officials (15-CV-114). (See Northern Pass Facing Challenges over Siting.)

The organization owns a parcel of land along Route 3 in northern New Hampshire known as the Washburn Family Forest, and it granted easements to the state Department of Transportation in 1931 for road construction through the land.

The society argued that those easements did not include underground construction, but the court disagreed.

"The court finds that under the plain language of [state law], NPT's proposed use is a proper use of the public highway easement ... [and] the DOT has exclusive jurisdiction over whether to grant NPT a permit to install the proposed transmission line below the stretch of Route 3 at issue," Judge Lawrence A. MacLeod Jr. wrote in the May 26 opinion.

The court also declined to consider the merits of the 192-mile line, which would transmit 1,090 MW of Canadian hydropower to the New England market. It said such questions were "speculative" until the DOT gave its approval.

"The DOT, not this court, must decide … whether a proposed project meets the 'public good' requirement of" state law, the court said.

The society said it was not surprised by the ruling.

"The decision effectively kicks the can down the road relative to the ultimate resolution of important property rights issues involving Northern Pass, the DOT and private landowners," spokesman Jack Savage said in a statement. "We note that the state Constitution expressly prohibits the use of the state's power of eminent domain for elective transmission projects and would have preferred not to wait for the DOT to potentially issue a license before resolving that constitutional conflict."

Savage told *RTO Insider* on Wednesday an appeal to the New Hampshire Supreme Court is one option under consideration.

Project developer Eversource Energy lauded the ruling.

"We are pleased the court recognized long-standing New Hampshire law that allows for the use of public roadways for projects like Northern Pass," Bill Quinlan, president of Eversource Operations in New Hampshire, said in a statement. "We look forward to continuing the permitting process and moving one step closer to delivering the clean energy and economic benefits to New Hampshire and the region."

Developers Seek Shorter Schedule

On Tuesday, Northern Pass Transmission, an Eversource subsidiary, asked the state's Site Evaluation Committee for a written decision on its application by June 30, 2017.

"The proposed schedule seeks to strike a balance between the statutory requirement to complete the evaluation within 12 months and the need for adequate time to evaluate a project the size and scope of Northern Pass," NPT said in a statement.

The committee last month informally indicated it would need nine more months than the year required by state law for its study of the project route, which would push its decision back to about Sept. 30, 2017. In a motion filed Monday, NPT is asking for a ruling three months earlier. A formal ruling by the committee on its schedule is pending. (See Northern Pass Decision Delayed Nine Months.)

MISO NEWS

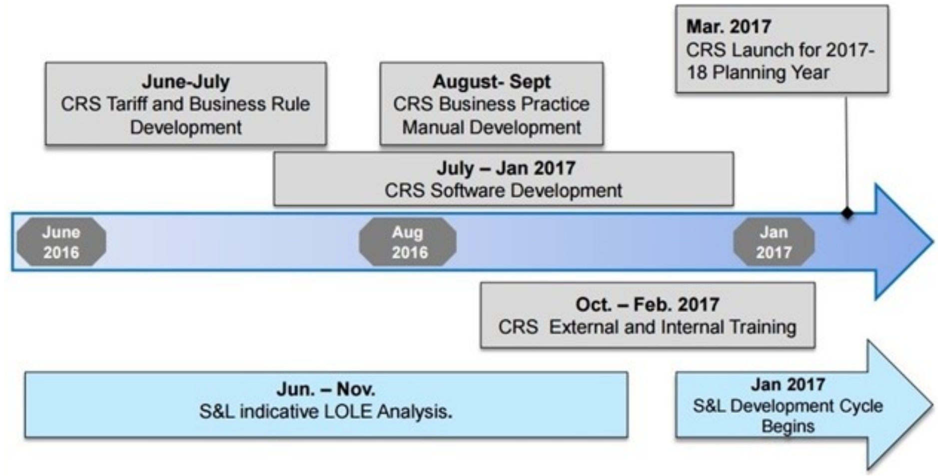
MISO Moves Forward on Auction Design; Seasonal Filling Delayed Again

Monitor Describes Approach on Avoidable Costs

By Amanda Durish Cook

MISO said last week it will not yield on a planned July filing for capacity auction changes in deregulated areas, but a filing to add seasonal and locational constructs will be delayed until later this year.

During a two-day meeting of the Resource Adequacy Subcommittee, Jeff Bladen, executive director of MISO market services, said the July 15 filing goal for a new auction design is unchanged and draft Tariff language will be in front of stakeholders in time for a special meeting of the RASC on June 13.



Auction redesign timeline *Source: MISO*

The Tariff filing planned for next month would introduce a bifurcated procurement using both the existing Planning Reserve Auction and a separate three-year forward model for deregulated areas that would use a sloped demand curve. MISO will allow regulated demand to voluntarily participate in the forward auction, but not regulated supply.

The RTO released business rules and an updated work plan on its proposal and has retained The Brattle Group to review it.

Bladen also addressed disagreements between MISO and the Independent Market Monitor over the proposed changes, saying the RTO was working to “close the gap.”

“I wouldn’t describe it as ‘at odds,’” Bladen said of the opposing viewpoints. “There’s a philosophical difference in how a sloping demand curve would be applied. We’re trying not to place any new rules on nonparticipating states.”

Last month, the MISO Board of Directors ordered the RTO and Monitor to negotiate their differences in a joint work session. (See *MISO Board Orders Negotiation in Longtime Auction Disagreement*.)

“This isn’t a summit meeting of Cold War adversaries,” Bladen reassured stakeholders. “MISO meets with the IMM regularly, and there are discussions between MISO and [Monitor David] Patton and his staff almost every day.”

Bladen conceded that if the talks result in major changes to the design construct, the July filing timeline would be “very hard” to accomplish.

Bill Booth of the Mississippi Public Service Commission asked what changes might result from the talks.

“I certainly wish I had an answer on what a compromise is going to look like, but we’re going to work through it … and find common ground,” Bladen said.

Other stakeholders repeated a desire for more time to review simulation results and vet Tariff language.

“We understand where your intentions are, but there are some that think the competitive retail solution isn’t necessary, and there’s a lot of work to be done in the Business Practice Manuals. I think the July Tariff filing is overly ambitious,” said Jim Dauphinais, counsel for Illinois Industrial Energy Consumers.

NRG Energy’s Tia Elliott asked if MISO would have a third party critique the Monitor’s proposed solution as well as the RTO’s. Bladen said that could be done.

MISO released 17 pages of business rules last week based on the prior presentations and asked for stakeholder response by June 8 so input could shape draft Tariff language, which is due in time for the June 13 special meeting of the RASC. Subcommittee liaison Renuka Chatterjee said the rules could be made into a new Business Practices Manual or inserted into existing BPM 11, which governs the Planning Resource Auction (PRA).

“This is very much a first draft,” Dauphinais said of the business rules document, pointing out that a demand curve shape hasn’t yet been settled on. “We’re concerned you’re not prepared to put out Tariff language on June 8.”

“I’ve heard a lot of opposition, but I haven’t heard a lot of support,” added Booth.

“Nothing is ever not contested at FERC,” Chatterjee offered in response.

Chatterjee outlined the work plan:

- June-July: Rewrite Tariff and BPM language
- July-January: Software development
- October-February: Internal and external auction training
- March: Launch (for 2017/18 planning year)

Study to Delay Seasonal, Locational Construct

While pushing ahead on the auction design, MISO has abandoned the July filing goal of seasonal and locational constructs and promised stakeholders an additional two months for the concepts to be vetted through the RASC. The delay will allow completion of a new seasonal loss-of-load expectation (LOLE) study and continuing talks on dividing capacity accreditation into winter and summer, according to MISO’s Laura Rauch.

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MISO NEWS

MISO Moves Forward on Auction Design; Seasonal Filling Delayed Again

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The study will explore how lower capacity reserve margins in the winter would affect seasonal capacity accreditation and how separate summer and winter LOLEs would impact capacity import/export limits and planning reserve margins. Rauch said MISO does not expect to have specific numbers on transfer capabilities and seasonal reserve margins until the fall.

Rauch also said more time is needed to consider definitions of external resource zones.

"We don't want to put a hard and fast timeline on this. Once we resolved these concerns, we will file, but we do want to file this year," Rauch said. Pressed by stakeholders, she said MISO is envisioning a September filing but would make an October filing if discussion or study findings warranted postponement.

"We've had three filings dates out there, and we don't want to keep moving things around," Chatterjee added.

Rauch said an open question is how MISO should define forced outage rates and planned outage hours during critical hours: weekday hours ending 15, 16 and 17 during June, July and August; and weekday hours ending 9, 19 and 20 during December, January and February.

LRZ	Local Balancing Authorities
1	DPC, GRE, MDU, MP, NSP, OTP, SMP
2	ALTE,MGE,MIUP, UPPC, WEC, WPS
3	ALTW, MEC, MPW
4	AMIL, CWLP, SIPC
5	AMMO, CWLD
6	BREC, DUK(IN), HE, IPL, NIPSCO, SIGE
7	CONS, DECO
8	EAI
9	CLEC, EES, LAFA, LAGN, LEPA
10	EMI, SME

A filing to implement external resource zones in addition to MISO's existing local resource zones (pictured above) and a two-season capacity construct will be delayed until the fall as the RTO gathers more information from stakeholders. *Source: MISO*

> **"I get the impression MISO just wants time to explain this better, but there's opposition because other alternatives exist."**
>
> **David Sapper, Customized Energy Solutions**

Rauch said a seasonal capacity accreditation process would begin next June.

Even with the seasonal and locational constructs paused for discussion, stakeholders were wary.

"I get the impression MISO just wants time to explain this better, but there's opposition because other alternatives exist," Customized Energy Solutions' David Sapper said.

Dynegy's Mark Volpe also said stakeholders don't want to spend the next two months sounding like a "broken record" on recommendations.

Both Chatterjee and Rauch said MISO staff would take time to respond to new questions and recommendations in the coming weeks.

Monitor Outlines Approach on Avoidable Costs

Meanwhile, Market Monitor Michael Chiasson outlined an approach that relies heavily on PJM to develop default technology-specific avoidable costs for future PRAs. FERC mandated the defaults in its New Year's Eve order to lessen the burden of verifying reference levels on a unit-by-unit basis (EL15-70 *et al.*).

A compliance filing is due June 28. Chiasson asked for stakeholder input in time for another review of draft Tariff language during the June 13 RASC conference call.

MISO and the Monitor agree that the RTO should use PJM default values for the 2017/18 planning year but without PJM's 10% adder. Chiasson said MISO doesn't have enough time to survey generators to develop its own default values before next year's auction.

"The June 28 compliance filing deadline makes it unlikely that a MISO survey would receive a sufficient number of responses to produce representative results for the various technology types," the Monitor explained. However, the Monitor said it would "consider expanding the IMM's operating cost survey so the default values can be based on MISO participant data in future years."

Because PJM doesn't develop default values for nuclear and wind units, the Monitor is proposing a wind avoidable cost of $108.30/MW-day based on Energy Information Administration data and a nuclear avoidable cost of $454.79/MW-day based on a recent white paper by the Nuclear Energy Institute.

For all the avoidable cost values, the Monitor suggested using the monthly Consumer Price Index to update values. Chiasson said the Monitor considered using other indices that track power production costs, but they were either overly reliant on capital costs versus operations and maintenance expenses, their values were too volatile or the reports weren't produced often enough. For planning years beginning more than six months after the latest CPI is released, the Monitor recommended using a 10-year average of CPI changes to escalate prices an additional year.

Dauphinais asked for more evidence supporting use of the PJM default values. "We're very anxious to get those," he said. "We're missing some data here." Chiasson said the Monitor would provide more information on PJM values at the next RASC meeting.

MISO News

Market Subcommittee Briefs

MISO to Set Two Emergency Pricing Offer Floors

MISO next month will implement two new offer floors for emergency pricing to alleviate what the RTO calls "price depression."

MISO filed the measures with FERC seeking a July 1 effective date and intends to implement by then even if the commission doesn't respond in time — leaving the plan subject to refund or recalculation.

"We don't anticipate that since [FERC] already accepted the [emergency pricing] Tariff revisions," Bob Merring, MISO's manager of market engineering, said at last week's Market Subcommittee meeting. The filing is what MISO refers to as a "true-up" between the Tariff and the already-accepted emergency pricing construct complete with offer floors, which won FERC approval in August (ER15-1776).

Merring also noted that the comment period on the filing has passed without any responses.

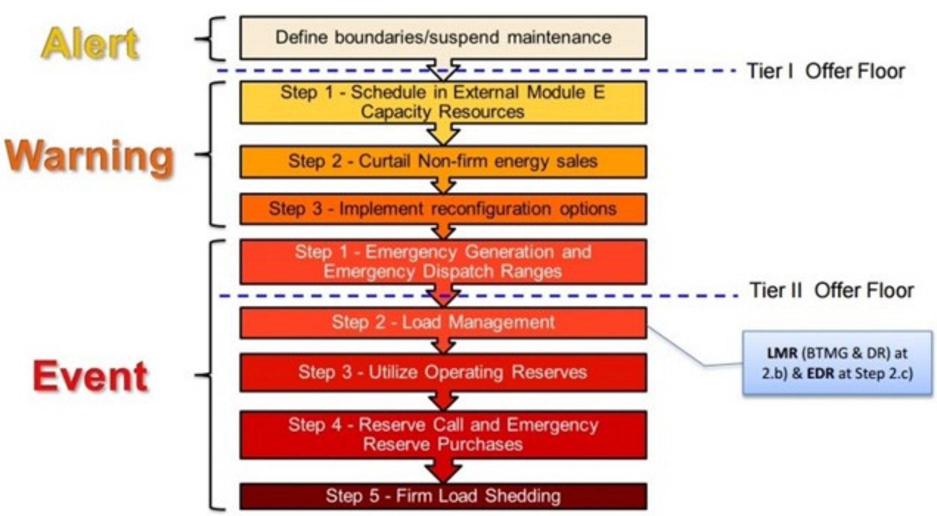
Accurate emergency pricing is needed "as we move into a world of tightening resources," he said.

After issuing an emergency alert, MISO would establish a first emergency pricing floor representing the highest economic offer in the market. A second, higher price floor based on offers would be established after the declaration of an emergency event requiring the call-up of emergency generation.

The RTO discussed raising offer floors last year and again at MISO's May 6 summer readiness workshop. (See *MISO Sees Enough Capacity for Summer*.)

MISO's extended LMP allows demand response to set prices under emergency conditions, but the RTO says the construct needs to be expanded to include more emergency resources. Prices can remain depressed if emergency offer prices are lower than prices for economic dispatch prior to an emergency declaration.

Merring said the gap could result in emergency resources entering the market at $0/MWh. "That's an undesired outcome," he added.



New emergency pricing with offer floors *Source: MISO*

MISO Clarifying Network Resource Designation

MISO has reworked portions of its Tariff to address stakeholder concerns with a proposal to remove duplicate network resource designations found in Module B and Module E.

The RTO earlier this year proposed changes that would define network resources simply as those that clear in the annual capacity auction. MISO's Kun Zhu said stakeholders were concerned that resources failing to clear would lose their network resource status. Others pointed out that the resource designation in Module E — dealing with resource adequacy — lasts just one year, while Module B — which focuses on network service — covers multiple years.

MISO is now proposing a new resource designation that would include those with interconnection service, a transmission service request or a scheduling right.

"Whatever we propose here will not disqualify any current network resource," Zhu said.

The revised designation also specifies that network resources are "owned by market participants but dispatched by MISO."

Zhu said the new designation will not impact other future uses of network resource status, including transmission planning, auction revenue rights nomination and MISO's possible "freeze date" reference point change.

Valy Goepfrich, WPPI Energy's vice president of operations and analytics, said the revised proposal alleviated some of her company's concerns with the March version of the proposal.

Feedback on the revised proposal must be submitted by June 17. No filing date has been set.

Continued on page 10

MISO NEWS

Ready or Not: FERC Approves 1st Storage Generator Interconnection Pact in MISO

By Amanda Durish Cook

INDIANAPOLIS — FERC last week accepted a generation interconnection agreement between MISO and the first utility-scale battery storage project in the footprint.

The commission approved a GIA for Indianapolis Power & Light's Harding Street Station Battery Energy Storage System, which is planned to go online this month, in spite of IPL's protests that the project was being mischaracterized. IPL had urged the commission to view the storage facility as a transmission asset.

The agreement isn't a straightforward storage-to-grid situation. The contract includes Harding Street's two existing gas turbine generators — designated as black start resources — alongside the newly constructed 20-MW storage facility. The batteries — eight 2.5-MW blocks — will use the existing interconnection facilities of the two existing gas turbine generator units, which connect to the Harding Street South substation. The commission accepted the GIA "in the interest of expeditiously connecting the battery facility to MISO's transmission grid" but said that it will not create a precedent for future storage facilities (ER16-1211-001).

"The Harding Street GIA is narrowly focused on the terms necessary to interconnect Indianapolis Power's battery facility and two existing combustion-turbine generators; the commission's action in this proceeding, therefore, does not prejudge

Harding Street power plant *Source: IPL*

potential improvements to the procedures or agreements that govern the interconnection of electric storage resources in the future," FERC explained.

Comprehensive Market Rules Needed

The commission also said that more comprehensive market rules for storage are needed.

"Although we accept the Harding Street GIA … we appreciate that MISO's *pro forma* GIA was not originally intended to govern the interconnection of electric storage resources to MISO's transmission grid," the commission said.

MISO and IPL disagreed over whether the *pro forma* agreement was an appropriate vehicle for the project. The RTO contended interconnecting under the GIA was correct, while the utility insisted that the storage facility should not be subjected to GIA provisions or referred to as a "generating facility."

FERC said a "generating facility" designation was appropriate because the *pro forma* definition includes "device(s) for the production and/or storage for later injection of electricity identified in the interconnection request." The commission also pointed out IPL's battery storage was bundled with two other generating units. However, the commission ordered MISO to add one instance of "energy storage resource" to the agreement.

MISO regarded the battery facility as an upgrade because it shares the same interconnection facilities as the existing generation. IPL had objected to this treatment, maintaining that the non-generating battery facility is a transmission asset that provides ancillary services.

IPL had also argued that the GIA's appendix does not apply to storage, but FERC decided it was unnecessary to "delete non-applicable provisions of a *pro forma* GIA."

The agreement was approved as MISO is considering expanding its definition of demand response resources to include medium-term energy storage. In April, stakeholders urged MISO to develop a cost of new entry for storage technology. MISO said a final proposal to change Tariff or Business Practices Manual revisions to accommodate near-term storage would be presented late summer or early fall. (See *MISO Stakeholders Provide Ideas on Incorporating Storage*.)

Market Subcommittee Briefs

Continued from page 9

Changes to Uninstructed Deviation Thresholds Longer than Anticipated

MISO's work with its Independent Market Monitor to re-examine thresholds for uninstructed deviation by generators is taking longer than anticipated. Implementation of a new approach to the issue is not expected until the first half of 2017 because of a delay in scoping the project.

MISO earlier said an alternative to the existing practice would be in place by the fourth quarter of this year.

"While we initially intended to begin briefing stakeholders … as early as this month, the fact that it's taking longer means a later implementation," said Jeff Bladen, MISO executive director of market services and liaison to the Market Subcommittee.

The Monitor first recommended tightening thresholds in 2012. Last year, Monitor David Patton said MISO is losing as much as 400 MW to derates during peak conditions because of a "lenient" tolerance band of 8%, with measurement based on four consecutive dispatch intervals. (See *MISO Monitor Debates Capacity Rules with Board*.)

The RTO will provide an update on the issue at the June 28 MSC meeting.

MSC Tweaks Charter to Avoid Stepping on Resource Adequacy Subcommittee's Toes

The MSC approved a motion to remove all mention of "capacity" from its charter following a recommendation from the Steering Committee.

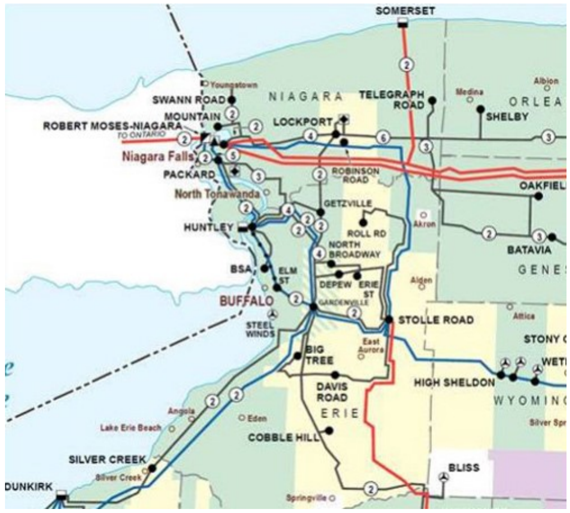
"The rationale [is] all things capacity belong in the Resource Adequacy Subcommittee," said Kent Feliks, MSC chair. "To avoid that overlap, we're simply moving capacity from the mission statement". (See "Market Subcommittee won't Undergo Name Change, will Modify Charter," *MISO Steering Committee Briefs*.)

— Amanda Durish Cook

NYISO NEWS

NYISO Identifies 10 Public Policy Tx Projects Outside Buffalo

By William Opalka



Buffalo area transmission map *Source: NYISO*

NYISO has identified 10 proposed transmission projects as finalists to relieve congestion in western New York.

The ISO issued a report last week in response to a 2015 New York Public Service Commission order that said relieving transmission congestion in the Buffalo area would produce environmental and reliability benefits and satisfy a public policy requirement under FERC Order 1000 (14-E-0454).

The PSC order resulted in the ISO's first Public Policy Transmission Planning Process, a solicitation that generated 15 proposals from eight developers at the end of last year.

The transmission need was defined in the PSC order and ISO baseline models. They identified overloads on the Niagara-Gardenville 230-kV and 115-kV transmission corridors, which were aggravated by imports from Ontario.

"In general, each project addresses at least some portion of the baseline transmission security issues, but not all projects addressed all of the bulk power transmission security issues," NYISO wrote. The ISO also says upgrades to three non-bulk transmission facilities may be necessary to satisfy the NYPSC objectives.

The intent of the transmission solution is to allow NYISO to use the maximum 2,700 MW of generation from the Niagara hydroelectric power station and a nearby pumped storage facility, and full access to at least 1,000 MW that would be imported from Ontario in an emergency.

"For each sufficient project, the developer of the project is qualified, the solution is technically practicable and the developer has an approach for acquiring any necessary rights of way, property and facilities," the report states.

The 10 qualified projects include four from North American Transmission, two from National Grid, one from the New York Power Authority and New York State Electric and Gas, two from NextEra Energy Transmission New York and one from Exelon Transmission.

The PSC will review the assessment made by the ISO and determine if the public policy need still exists. It would then issue an order for NYISO to continue to evaluate and rank the projects identified in the report.

NYISO would then determine which projects are most efficient or cost-effective and eligible for cost allocation and cost recovery under its Tariff. Its findings would be released in the Western New York Public Policy Transmission Planning Report.

The PSC has also determined a public policy need exists to help address transmission congestion into southeastern New York. Proposals from developers were due at the end of April and are currently being evaluated by NYISO. (See *NYPSC Directs NYISO to Seek Tx Bids*.)

Constitution Asks FERC to Dismiss New York AG's Complaint

Constitution Pipeline asked FERC on Thursday to dismiss a complaint by New York's attorney general alleging illegal tree cutting, requesting fast-track resolution to the ongoing dispute over the proposed 124-mile natural gas project (CP13-499).

The company vehemently denied allegations made by Attorney General Eric Schneiderman that it encouraged illegal tree cutting by landowners in defiance of a FERC prohibition, calling the complaint "part of a pattern seeking to delay construction."

"The complaint does not contain any evidence that 'clear-cutting' ... has occurred or, if it did occur, that it was performed or caused by Constitution," the company wrote. "Instead, the complaint merely contains vague allegations that landowners or the landowners' logging companies, against whom the attorney general seeks no enforcement action, conducted tree clearing, road building or other ground disturbing activity on the pipeline right of way in New York, in 10 locations [that] the attorney general refuses to, and fails to, describe with any specificity sufficient to actually identify any of them."

Constitution said the vagueness of the attorney general's complaint required that FERC appoint an administrative law judge to develop a complete record. It also said that fast-track processing was necessary because the complaint alleged ongoing violations of federal law.

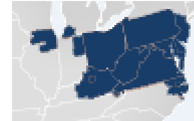
Schneiderman wants FERC to investigate the company and assess it fines. (See *New York Demands Probe of Tree Cutting on Pipeline Route*.)

The pipeline is intended to bring shale gas from the Marcellus region of Pennsylvania into the New York and New England markets.

In April, the New York Department of Environmental Conservation denied Constitution a water quality permit under Section 401 of the federal Clean Water Act. Constitution last month appealed the permit denial in federal court. (See *Constitution Pipeline Appeals Rejection of Water Permit*.)

— William Opalka

PJM NEWS



Exelon to Close Quad Cities, Clinton Nuclear Plants

By Suzanne Herel

Exelon will close its Clinton and Quad Cities nuclear plants after the Illinois General Assembly adjourned this week without acting on a bill that would have subsidized the money-losing stations, the company said Thursday.

Quad Cities nuclear plant

Clinton will shut down next June 1, and Quad Cities will close the following year. Together, the plants have lost $800 million in the past seven years, Exelon said.

The company will be submitting permanent shutdown notifications to the Nuclear Regulatory Commission within 30 days. Among other steps toward closure, Exelon will be ending capital investment projects at the plants, taking a one-time charge of $150 million to $200 million for the year, accelerating about $2 billion in depreciation and amortization and canceling fuel purchases and outage planning, Exelon said.

Ceasing the investment projects will impact more than 200 workers, and more than 1,000 outage workers will be affected, according to the company.

"We have worked for several years to find a sustainable path forward in consultation with federal regulators, market operators, state policymakers, plant community leaders, labor and business leaders, as well as environmental groups and other stakeholders," CEO Christopher Crane said. "Unfortunately, legislation was not passed, and now we are forced to retire the plants."

Crane had given legislators a May 31 deadline to help shore up the money-losing generators if the 1,819-MW Quad Cities station did not clear the PJM Base Residual Auction for delivery year 2019/20. It failed to do so. (See *Absent Legislation, Exelon to Close Clinton, Quad Cities Nukes*.)

While the 1,065-MW Clinton plant won contracts in the MISO auction, its clearing price was insufficient to cover operating costs, Crane said.

According to Exelon, their closures will represent a $1.2 billion loss in economic activity and 4,200 direct and indirect jobs. The plants employ 1,500.

The Exelon-backed legislation, called the Next Generation Energy Plan, incorporates pieces of a similar bill the company proposed last year as well as part of the competing Clean Jobs Bill. The latter proposal aimed to reduce energy demand by 20% through energy efficiency; increase the renewable portfolio standard from 25% by 2025 to 35% by 2030; and create an estimated 32,000 jobs annually by creating a market mechanism to reduce carbon emissions.

Clinton nuclear plant

A key element of the new plan is a shift to a zero-based emission standard, which would provide financial support for struggling nuclear plants in recognition of their lack of carbon emissions.

Exelon said the standard would address stakeholder concerns by requiring state regulators to review plants' expenses to ensure that only those whose revenues are insufficient to cover their costs and "operating risk" would receive compensation.

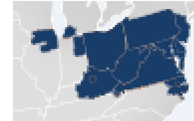
On Friday, the bill received the endorsement of Ameren Illinois, but on the condition of an amendment changing energy efficiency targets that could make it unpalatable to environmentalists.

In introducing the energy plan, Exelon said it was an outgrowth of discussions among it, Commonwealth Edison and members of the Clean Jobs Coalition, a group representing Illinois' environmental, business and faith communities.

The coalition supports the bill's expansion of ComEd's energy efficiency programs, which it said would save customers at least $4 billion over a decade. But it said the Ameren amendment would exclude that utility's customers from the expansion.

Continued on page 13

PJM NEWS



FERC Rejects Ramp Rate Exception in PJM Capacity Rules

By Suzanne Herel

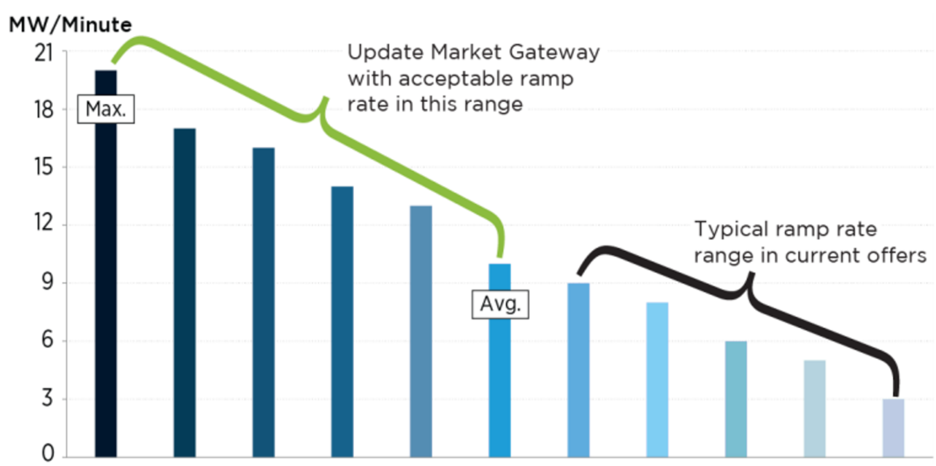
FERC on Tuesday rejected PJM's Tariff changes that would have exempted a capacity resource from nonperformance charges if it was following the RTO's dispatch instructions and operating at an acceptable ramp rate during periods of high load.

The changes, approved in April by the Members Committee after months of stakeholder debate, were designed as an interim solution to guard against generators self-scheduling prior to a performance assessment hour in order to avoid nonperformance charges. Such behavior, PJM said, would pose operational challenges and create reliability issues. (See "MRC, MC Endorse Interim Ramp Rate for Performance Assessment Hours," *PJM Markets and Reliability and Members Committee Briefs*.)

"Given the importance of the penalty structure to the Capacity Performance design, we … must carefully weigh whether the operational concerns documented in the record justify the negative impact that PJM's proposed penalty exemption would have on these performance incentives," FERC ruled. "We conclude that PJM has not met that burden here" (ER16-1336).

Under PJM's proposal, resources' energy offers would include a historical three-month average ramp rate.

The Independent Market Monitor and LS Power said that PJM had not proven its assertion that self-scheduling before an emergency period would cause operational issues.



Historical average ramps *Source: PJM*

"According to the Market Monitor, if resource owners self-schedule their resources in anticipation of tight conditions in the energy market, it is less likely that emergency procedures would be triggered and would instead indicate that nonperformance charges are working as intended to incent generation to operate during high-demand conditions," FERC said.

"The Market Monitor argues that PJM's proposal is discriminatory and disincents flexibility by holding more flexible resources (i.e., those with faster ramp rates) to a higher standard for expected incremental megawatts during a performance assessment hour than less flexible reserves."

Calpine and Rockland Capital argued that generators should not be excused from penalties because of their choice of the type of capacity they offer into the market.

PJM Power Providers, the Delaware Public Service Commission and Dayton Power and Light supported PJM's proposal.

In rejecting the Tariff changes, FERC quoted from PJM's own initial filing proposing Capacity Performance, which said, "Parameter limits should not be viewed as a permanent entitlement to underperform. Instead, those limits should be exposed to financial and market consequences: If sellers of resources with fewer operating limits earn more from the capacity market … than sellers of resources with more restrictive operating limits, then all sellers will be incented to find ways to minimize those operating limits, which should over time increase overall fleet performance and benefit loads in the region."

Exelon to Close Quad Cities, Clinton Nuclear Plants

Continued from page 12

"While ComEd has offered a strong energy efficiency plan, the Ameren proposal … is a half-measure that will leave downstate customers with fewer jobs and higher bills than people in Chicago and Northern Illinois. Ameren is really leaving Central and Southern Illinois in the dark," the coalition said in a statement.

Exelon said it will continue to push the legislation.

"While these needed policy reforms may come too late to save some plants, Exelon is committed to working with policymakers and other stakeholders to advance an all-of-the-above plan that would promote zero-carbon energy, create and preserve clean-energy jobs, establish a more equitable utility rate structure and give customers more control over their bills," it said.

Marvin Fertel, CEO of the Nuclear Energy Institute, issued a statement calling the plants' closure "a tragedy" that threatens the "nation's ambitious clean air commitments."

"At-risk nuclear plants are struggling because the electricity markets do not appropriately value the attributes of nuclear plants, including reliable electricity generation and their carbon-abatement value. This is fixable, but federal and state policymakers, the Federal Energy Regulatory Commission and regional electric system operators must address these shortcomings with urgency to prevent other power plants from shutting down prematurely."

Lessons Unlearned: FERC's Punt on Market Monitors' Independence

SPP MMU Struggles to Find its Voice

Former monitors Catherine Mooney and John Hyatt | MMU Director Alan McQueen | SPP Board Member Harry Skilton | MOPC Chairman Noman Williams, Gridliance | Rob Janssen, Dogwood Energy

Former SPP market monitors Catherine Mooney and John Hyatt say MMU Director Alan McQueen only allowed them to challenge SPP proposals before FERC after pressure from commission staff. Hyatt said SPP board member Harry Skilton discouraged the MMU from such filings, saying, "we like to handle these [disputes] within the SPP family." Noman Williams, now chairman of the Markets and Operations Policy Committee, called for the MMU to "become much more engaged in the process" of reaching consensus solutions rather than merely observing and critiquing. Former MOPC Chairman Rob Janssen voiced concerns about a "PJM-style train wreck" if the MMU filed comments with FERC, Mooney said.

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March 1, 2014, for the greater benefit of SPP and its members." The changes the MMU sought "were not seen as critical for the market to launch," they said, adding that the MMU believed it could make changes after market launch.

Mooney and Hyatt said SPP had warned staff against doing anything that could delay the launch of the marketplace, which gave the RTO a day-ahead market, real-time balancing market and a centralized balancing authority. "If the market is delayed, it better not be your fault," they said RTO employees were told by management.

When the marketplace opened, SPP boasted in a press release that it was the first RTO "to design, build and deliver a Day 2 market on time."

FERC rejected the belated rehearing request in August 2015.

Three Challenges

The MMU's first direct challenge to SPP came in April 2015, when Mooney asked FERC to reject proposed Tariff changes that would prevent the RTO from canceling commitments of gas-fired generators if they are not needed. SPP's proposal, Mooney wrote, would result in "an inefficient transfer of gas market risks to SPP's load." (See *SPP Market Monitor Protests Make-Whole Promise for Gas Units*.)

FERC rejected the monitor's concerns and accepted the Tariff changes in August (ER15-1293). The commission said the RTO's proposal "provides additional certainty about how SPP will operate during extreme conditions" and that it was "not proposing fundamental changes to the way it administers de-commitment of resources."

The MMU fared better in September 2015, when it helped persuade FERC to reject an SPP proposal to change what costs are included in mitigated offers, which are required when a generator is deemed to hold market power (ER15-2268).

In February 2016, FERC again sided with the MMU over SPP in the solution to an underfunding problem in the RTO's transmission congestion rights market (ER16-13). As recommended by the MMU, the commission set the amount of transmission system capability to be offered during the annual auction revenue rights allocation process at 60% for October through May, rejecting SPP's proposal of an 80% allocation. (See *FERC Rejects SPP's Proposed 80% ARR Allocation*.)

'Obstructing SPP's Progress'

Hyatt said McQueen often complained "'You don't understand the pressure I'm under.'"

McQueen declined to say whether he had made such a comment.

The mitigated offer case provided a vivid illustration of the pressures.

SPP filed its proposed Tariff changes after more than a year of stakeholder meetings failed to reach consensus on the issue. The RTO acted in response to generators who became upset after the Integrated Marketplace opened that the MMU was not including general operations and maintenance in its calculations of cost-based offers.

In April 2014, SPP created the Mitigated Offer Task Force to address the generators' concerns. Mooney and Hyatt said they opposed concessions to the generators in defense of "efficient market economics."

The monitors argued that SPP's proposed changes would allow mitigated offers to include recovery of variable operation and maintenance (VOM) costs that are not short-run marginal costs. FERC had required the RTO in an October 2012 order to "establish that offers are to be mitigated to their short-run marginal costs of the generating unit."

Mooney said the monitors' position brought a rebuke from McQueen, who told Mooney that they were "obstructing SPP's progress."

There were a "lot of messages to not say this or that, because it's a hot button and it makes the members upset," Mooney said. The term "short-run marginal costs" was one such hot button. "I was told to stop using those words altogether," she said. The term is "in SPP's Tariff. It's hard to have an intelligent conversation about short-run marginal costs without saying the words."

McQueen did not respond to requests for comment for this article.

Hyatt recalled a lunch that members of the MMU had with several SPP board members last June, at which he said Vice Chairman Harry Skilton expressed disappointment that the MMU was considering a FERC filing differing from the RTO's position. "We like to handle these [disputes] within the SPP family," Skilton said, according to Hyatt's recollection.

"These types of comments were very common," Hyatt said.

Skilton declined to comment.

Lobbying the Oversight Committee

Such messages also were delivered by members.

In September 2014, Noman Williams, then of Sunflower Electric Power, attended a meeting of the Board of Directors' three-member Oversight Committee "to represent the member perspective" on the issue, according to meeting minutes.

The Oversight Committee is responsible for monitoring compliance with SPP and regulatory policies. It also is assigned to supervise the MMU. Attachment AG of

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Lessons Unlearned: FERC's Punt on Market Monitors' Independence

SPP MMU Struggles to Find its Voice

Continued from page 15

SPP's Tariff states that "management representatives on the Board of Directors will be excluded from the Board of Directors' oversight of the market monitor."

Nevertheless, until recently, SPP management regularly attended Oversight Committee meetings with the MMU. Stacy Duckett, then vice president and chief compliance officer, was in attendance when Williams made his pitch.

Williams "suggested MMU be more overt on its positions and intent to resolve matters through the SPP process," according to the minutes.

Williams, now chairman of the Markets and Operations Policy Committee, said in an interview that he was encouraging the MMU to "become much more engaged in the process" of reaching consensus solutions rather than merely observing and critiquing. He said he was not suggesting the MMU not file opposing comments before FERC.

Mooney recalls then-MOPC Chairman Rob Janssen, of Dogwood Energy, saying at a meeting in December 2014 that he feared a "PJM-style train wreck" if the MMU filed comments with FERC opposing a Tariff change supported by members. Janssen formerly worked at D.C. consulting firm Boston Pacific, where he helped McQueen and Director of Market Design Richard Dillon structure the MMU.

His remark was an apparent reference to what transpired in 2007, after PJM Market Monitor Joe Bowring — then a PJM employee — complained at a FERC technical conference that RTO management was attempting to muzzle him. Following an investigation, PJM's CEO resigned and Bowring formed his own company to become the RTO's external monitor.

Janssen declined to comment. (See sidebar, *'The Most Troubled Period in the History of PJM*, p.20.)

Dueling Proposals

In July 2014, American Electric Power's Richard Ross proposed market protocol revision request (MPRR) 197, which would allow generators that did not use FERC accounts or separate variable costs from fixed costs in their commission filings the ability to "include some level of variable costs in their mitigated offers."

At McQueen's direction, Mooney helped develop a compromise, MPRR 213, that was submitted by ACES Power in September. The proposal included a table of costs that was less generous than the AEP proposal but still higher than Mooney wanted. "These numbers were drawn up to be large enough to get the members to stop complaining," Mooney said.

In December 2014, the MOPC recommended that the Board of Directors approve the AEP proposal, but the board declined, citing the MMU's opposition. Instead, the board created the Mitigated Offer Strike Team to reach a compromise.

The team was composed of Dillon, McQueen and representatives from Westar Energy, ACES and the Oklahoma Municipal Power Authority. Mooney, AEP's Ross and other members of the earlier task force were excluded from the strike team, which met in private, not open to any other stakeholders.

The strike team sent a written recommendation to the MOPC that called for implementing default VOM costs for mitigated offers as an interim measure and adapting MISO's approach for mitigated offers as the long-term solution.

At a testy MOPC meeting on Jan. 13, 2015, Dillon presented the recommendation, which was described as unanimous.

But an uncomfortable-looking McQueen was reluctant to give the proposal his endorsement. "I think the approach was a sound way to do it" was as far as he would go, according to *RTO Insider*'s contemporaneous notes of the meeting.

Doug Collins of the Omaha Public Power District complained that the costs the MMU wanted to include were "one-tenth of 1% of the costs I want to include," he said, hyperbolizing for emphasis. (See *SPP Moves Forward on Change to Generator Mitigation Rules*.)

Two months later, in an apparent effort to straddle the divide, McQueen told the MWG that the MMU supported the default costs but wanted the Tariff change to include the words "short-run marginal costs." Mooney protested that the MMU's position was illogical because the default levels were not representative of short-run marginal costs. "This is not about logic," Mooney said McQueen told her. "This is about people."

In July 2015, SPP filed a Tariff change that largely mirrored the compromise MPRR 213. SPP's filing drew protests and interventions from nearly two dozen market participants, including the New Jersey Board of Public Utilities, which said it feared an "adverse precedent that spills over to other regions."

The MMU responded with a filing Aug. 14 that disagreed with several aspects of the change. Two subsequent filings were stronger in their criticism.

"The audit made it very clear that FERC was watching what we were doing," Mooney said. "I do think that contributed to the strength of the statements."

SPP proposed generators be able to recover VOM costs that included maintenance overhauls, long-term service agreements, insurance and inspection services.

The MMU, in contrast, said recoverable costs should be limited to the cost of inputs "directly consumed" as a result of a generator's decision to produce in a given hour: fuel, emissions, opportunity costs, "a small amount of maintenance and, on occasion, labor."

The MMU also disputed assertions by SPP and generation owners including AEP and Westar Energy that "all variable costs and short-run marginal costs are synonymous terms or otherwise interchangeable."

"The decision to incur major maintenance costs, as well as many of the other costs included in the FERC maintenance accounts that the SPP filing seeks to include in mitigated offers, are long-term decisions," it said.

The SPP proposal included a default start-up VOM cost for industrial frame gas

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"It's hard to have an intelligent conversation about short-run marginal costs without saying the words."

Catherine Mooney, former SPP market monitor

Lessons Unlearned: FERC's Punt on Market Monitors' Independence

Independent Market Monitors Wouldn't Have It Any Other Way

Continued from page 1

monitoring for MISO, ISO-NE, NYISO and ERCOT and has done occasional work for CAISO and SPP.

"You cannot do your job as a market monitor if you're not independent, if you're not free to criticize the RTO and its members, if you're told to pull your punches," agreed Bowring, whose Monitoring Analytics serves as PJM's monitor.

Stormy Beginning

Monitoring Analytics was born in 2008, after Bowring — then a PJM employee — complained at a FERC technical conference that then PJM President Phil Harris and his allies were attempting to muzzle him. Bowring accused PJM management of censoring his reports, preventing him from presenting his views to a stakeholder committee, raiding his staff and threatening to disband the MMU altogether.

"PJM has made it clear that, from management's perspective, the market monitor is first an employee of PJM with all the duties of an employee including obeying management orders, i.e. following the chain of command," Bowring told the commission.

Stu Bresler, PJM senior vice president of market operations (left), and Bowring at the 2016 PJM Annual Meeting © *RTO Insider*

"Based on my experience, it is not possible, as a practical matter, to maintain the independence of the MMU while leaving the control of personnel decisions, including hiring, firing, reviews and promotions, with RTO management."

State consumer advocates, the PJM Industrial Customer Coalition and several electric cooperatives filed a request for a show cause order requiring PJM to answer Bowring's allegations (EL07-56). State regulatory commissions and the Organization of PJM States Inc. (OPSI) followed about a week later with a complaint seeking a FERC investigation (EL07-58).

"The independence of the PJM MMU is of paramount importance because a wholesale market that is not competitive and not resistant to market power allows market participants to exercise market power and demand monopoly prices from customers to the detriment of the public," the OPSI complaint said.

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SPP MMU Struggles to Find its Voice

Continued from page 16

turbines of $15/MW. Monitoring Analytics, which was advising SPP as a consultant, had recommended setting the short-run marginal costs for such plants at only $0.12/MW — or less than 1% of what SPP proposed.

SPP's proposal, the MMU said, would result in unjust preferences to generators with market power, allowing the RTO to obtain excessive "cost-based" rates. It noted that "competitive pressure prevents those without market power from similarly raising offers to obtain higher revenues."

FERC rejected SPP's proposal in an Sept. 22 order. (See *FERC Sides with SPP Monitor on Mitigated Offers*.)

"We find that SPP's proposal to base mitigated offers on variable costs may lead both to inefficient dispatch outcomes, characterized by higher production cost, and to distorted locational marginal prices that do not reflect competitive conditions," the commission said.

FERC said SPP failed to define the term "variable cost" or to "describe with specificity what costs may be included in mitigated offers as variable costs that were not previously regarded as short-run marginal costs."

"As such," the commission said, "SPP proposes to replace one phrase that SPP contends is undefined (short-run marginal cost) with another phrase that is not well defined (variable cost)."

Monitoring Analytics, PJM's Independent Market Monitor, also had weighed in on the case, filing a protest that backed the MMU's position.

The IMM said the proposed changes raised questions about whether SPP was protecting its MMU's independence. "When the SPP market monitor made interpretations with respect to mitigated offers that SPP market participants did not like, the response was that market participants initiated a stakeholder process to apply pressure on the SPP market monitor to compromise or change those interpretations," FERC said, paraphrasing the IMM's filing.

The commission rejected the PJM monitor's call for an examination of the MMU's independence as outside the scope of the docket. "We note, however, that the SPP market monitor's participation in this case demonstrates the importance of having an independent market monitor … to ensure that markets are competitive."

[Editor's Note: SPP/ERCOT Correspondent Tom Kleckner worked as an SPP spokesman from 2011 to 2015; Editor-in-chief Rich Heidorn Jr. is a former member of FERC's Office of Enforcement.]

Lessons Unlearned: FERC's Punt on Market Monitors' Independence

Independent Market Monitors Wouldn't Have It Any Other Way

Continued from page 17

Region	Performed by	2016 Budget
CAISO	Internal: CAISO staff	N/A (Refused to Disclose)
ERCOT	Independent: Potomac Economics	$3.65 million (14.6 million over four years)
ISO-NE	Hybrid: Potomac Economics / ISO-NE staff	$900,000 / $4.7 million
MISO	Independent: Potomac Economics	$6.46 million
NYISO	Independent: Potomac Economics	$3.1 million
PJM	Independent: Monitoring Analytics	$12.5 million
SPP	Internal: SPP staff	$2.5 million

CAISO declined to provide budget totals for its Department of Market Monitoring, saying that while it makes division budgets public, it does not do so for individual departments. CAISO also declined to provide the budget for its Market Surveillance Committee, an advisory group, calling it "proprietary."

Following a FERC review of 2,700 pages of documents produced in response to data requests, CEO Harris resigned and FERC approved a settlement between PJM and Bowring. (See sidebar, *'The Most Troubled Period in the History of PJM*, p.20.)

The settlement called for Bowring — who previously worked at New Jersey's Board of Public Utilities and Division of Rate Counsel — to form an independent company, which was awarded a six-year contract as PJM's market monitor (EL07-56, EL07-58).

The PJM Board of Managers was given limited authority over the monitor — specifically, the power to review its budget and to decide whether to retain or replace the firm at the end of the initial term.

2013 Skirmish with PJM Board

The settlement did not end all conflicts. Both Bowring and PJM Board Chair Howard Schneider are strong-willed personalities and can be blunt when they disagree. Bowring also disagrees frequently and forcefully with PJM officials at stakeholder meetings.

Tensions flared anew in 2013 when the board attempted to issue a request for proposals to shop for potential alternatives to Bowring's firm after the initial six-year term.

It's doubtful the RFP would have generated many responses. Market monitoring requires an analytical infrastructure that few firms possess, and many of those that do would be prevented from bidding because they have market participants as clients. When the Public Utility Commission of Texas issued an RFP last year for monitoring of ERCOT, only incumbent Potomac Economics submitted a bid.

Nevertheless, state regulators, industrial consumers and cooperatives reacted with alarm to the draft RFP, saying it contained language that would undermine the independence and quality of the monitoring function. They sent letters to the board praising Monitoring Analytics' performance and threatening to protest to FERC.

The board dropped the RFP in response to the outcry, signing a new contract with Monitoring Analytics running through 2019. (See *PJM, Monitoring Analytics Sign New Contract*.)

At the OPSI annual meeting in October 2013, Bowring and Schneider symbolically buried the hatchet. The two shared the dais with then-Maryland Public Service Commissioner Lawrence Brenner, chairman of OPSI's Market Monitoring Committee, who had intervened in the contract dispute.

Brenner said he was happy to be able to call Bowring the "current and future market monitor," prompting Schneider to interject — "current and future king" — with a chuckle.

"He has managed to annoy just about everybody in this room," Robert Hanna, then president of the BPU, said of Bowring. "To me that's a very good sign. He's not in the tank for anybody. He does it in a principled way and he lets you know the basis."

Patton not Shy About Criticizing Clients

David Patton hasn't gotten involved in such drama since founding Potomac Economics in 2001 after stints at the Department of Energy and FERC.

But like Bowring, he has not been shy in criticizing the grid operators that hired him.

Patton's first client was NYISO, followed in 2003 by ISO-NE and ERCOT in 2005. His firm also has done work for CAISO and SPP. It employs more than two dozen employees, most in its Fairfax, Va., headquarters, with several others in Texas and at MISO headquarters.

The firm's role varies by region. At ISO-NE, for example, the internal monitoring staff of 20 handles day-to-day monitoring and market power mitigation, while Patton's firm produces monthly and quarterly reports and the annual State of the Markets review critiquing market performance and making recommendations.

The company provides virtually all monitoring for MISO, NYISO and ERCOT. (The monitors work in ERCOT's headquarters in Austin.)

New York shifted to an external monitor — from an internal MMU with an external market adviser — after FERC Order 719 in 2008. (See *Order 719: FERC Balanced MMU Independence against RTO Autonomy*.)

All recommendations from Potomac are considered in the NYISO's annual project prioritization, a stakeholder process in which costs and benefits are weighed to determine the highest priority projects for the upcoming year.

Recommendations

It can take a while for monitors' recommendations to result in changes — if ever. When MISO did a periodic review of Patton's recommendations last August, 22 were pending, some dating back to 2005. (See *What Happens to All Those MISO Market Monitor Recommendations?*)

As of March, about one-quarter of Bowring's recommendations between 1995 and 2015 had been fully adopted by PJM. (See *Bowring Urges Return to 'Fundamentals.'*)

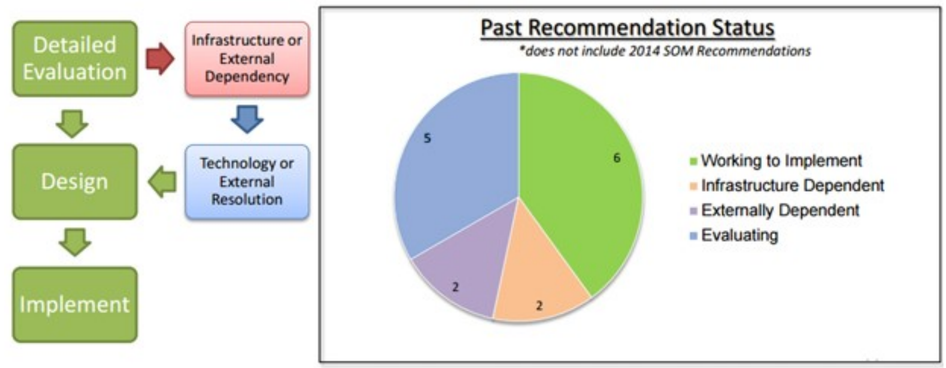
"This is the one job I can think [of] where an economist can not only just observe something they have no control over, but observe, draw conclusions and contribute to improving the performance of the market

Continued on page 19

Lessons Unlearned: FERC's Punt on Market Monitors' Independence

Independent Market Monitors Wouldn't Have It Any Other Way

Continued from page 18



MISO response to monitor recommendations *Source: Aug. 26, 2015, MISO presentation*

by making recommendations," Patton said in an interview in his office. That, he said, "is extremely satisfying."

"Because we're independent of the RTO and the participants and FERC, we are in the position to be completely objective about what we see, what we think is right," he continued. "We have no client that has an interest that we need to worry about. Our client is the market and our objective is to maximize the competitiveness and the efficiency of the market."

Virtues of Independence

The RTO itself, Patton notes, is one of the entities the monitor is charged with policing. "Nobody affects the market more than the RTO does, with the decisions that they make as they operate the market; the reliability actions they take; the parameters they set in the software. And a lot of those actions are nonpublic; they can't be observed by participants. So I've always viewed one of the most important jobs we have is to monitor what the RTO is doing and ensure that the RTO is following its own Tariff and not exceeding the authority provided under the Tariff, and not engaged in actions that could conceivably be deemed manipulative. … I don't know how you would do that effectively as an internal market monitor."

Patton said that independence also allows him to take positions that may be unpopular with stakeholders.

"We can get out in front and propose things that the stakeholders might come around [to], like the sloped demand curve, or that FERC, frankly, might take up and compel the RTOs to address," he said.

Patton said internal MMUs are subject to what he called the "the customer satisfaction conflict."

"Because RTOs are voluntary and FERC has not enforced a very high standard on entities that want to leave RTOs or switch RTOs, the RTOs have a pretty strong incentive to make their customers happy. Generally, that's a really good thing. But a lot of what you do as a market monitor may make individual customers or groups of customers very unhappy," Patton said.

Indeed, SPP saw Entergy spurn it for MISO in 2014, after acting as the company's independent coordinator of transmission for more than seven years. MISO member American Transmission Systems Inc. moved to PJM in 2009, followed a year later by Duke Energy Ohio and Duke Energy Kentucky. Just last month, Dynegy called on Illinois legislators to approve a bill that would move Central and Southern Illinois to PJM from MISO. (See *Dynegy Introduces Bill to Move All of Ill. Into PJM*.)

"So I think it's a benefit for the RTO and for us to be independent," Patton continued. "If [the monitor] is a group of employees of the RTO, then it's pretty easy for the customers to be upset with the RTO when something happens that they're not happy with. So that conflict is nearly completely resolved by having the market monitor be independent."

Status		Priority High	Priority Medium	Priority Low	Total	% of Total
Adopted		20	13	16	49	24.4%
Partially Adopted		6	10	8	24	11.9%
Not Adopted	(No Action)	20	39	44	103	51.2%
	(Pending before FERC)	3	1	0	4	2.0%
	(Stakeholder Process)	6	7	1	14	7.0%
Replaced by Newer Recommendation		1	5	1	7	3.5%
Total		56	75	70	201	100.0%

Status of PJM Independent Market Monitor recommendations from 1999 to 2015 *Source: Monitoring Analytics' 2015 State of the Market report*

Patton has demonstrated his independence repeatedly in his criticism of MISO's capacity market.

Most recently, he criticized the three-year forward capacity auction MISO has proposed for Southern Illinois' Zone 4. (See *MISO Board Orders Negotiation in Longtime Auction Disagreement*.) ISO-NE and PJM use a similar construct.

"The economic theory underlying a three-year forward procurement is not sound," he said. "The notion that … new participants can offer efficiently in that auction and have that guide their decision to invest when you're giving them a one-year contract on a 40-year asset is" unproven.

He has long proposed that MISO switch from a vertical to a sloped demand curve.

At MISO's Annual Meeting last June, Patton engaged in a debate with board members Michael Curran, Judy Walsh and Paul Feldman over the issue. (See *MISO Monitor Debates Capacity Rules with Board*.)

At the end of the meeting Curran thanked Patton for his analysis, but couldn't resist a little jab. "You're going to have a sloped demand curve on your tombstone."

"Cause somebody's going to kill me?" Patton responded, laughing nervously.

"No," Curran said. "This is the Midwest. These are nice people."

Tom Kleckner, William Opalka and Amanda Durish Cook contributed to this article.

Lessons Unlearned: FERC's Punt on Market Monitors' Independence

'The Most Troubled Period in the History of PJM'

State Regulators: FERC Probe into Bowring Allegations Fell Short

Joe Bowring's allegations at a FERC technical conference in 2007 that PJM management had attempted to muzzle his internal market monitoring unit shook the RTO to its roots.

It was "the most troubled period in the history of PJM," Irwin "Sonny" Popowsky, then Pennsylvania state consumer advocate, told *The Washington Post* at the time. Patrick McCullar, president of the Delaware Municipal Electric Corp., said confidence in PJM management "seems to be at an all-time low."

Bowring's allegations led to the resignation of the RTO's top two officials — and, ultimately, to the establishment of an independent MMU function. (See related story, *Independent Market Monitors Wouldn't Have It Any Other Way*, p.1.)

But it wasn't the finest moment for FERC in the view of state regulators, who contended the commission conducted only a half-hearted investigation.

Bowring made his allegations in April 2007 after then-CEO Philip Harris said he was considering replacing Bowring and his team with an outside firm. Bowring accused PJM management of censoring his reports, preventing him from presenting his views to a stakeholder committee and raiding his staff.

The allegations prompted PJM's Board of Managers to hire a law firm to conduct an internal investigation and FERC to issue data requests to Bowring and the RTO.

By May, PJM COO and executive vice president Audrey Zibelman had resigned, followed by Harris' retirement two months later. Zibelman, now chair of the New York Public Service Commission, and Harris, now CEO of Tres Amigas, later married.

Restoring Confidence

Based on its review of 2,700 pages of documents produced by the data request, the commission issued an order in September 2007 concluding that PJM had not violated its Tariff but that RTO management exerted an "unusual degree of supervision" over the monitor. While ordering Bowring and PJM to seek a settlement to the dispute, the commission made a preliminary finding that the monitor should report to the board rather than management.

"A consensual resolution is most likely to restore confidence in the efficient, impartial and competitive operation of PJM's markets and in the monitoring of those markets, confidence that has been jeopardized by the recurring controversy over the role of PJM's MMU," FERC said.

The commission noted that although Bowring had sent an email in January 2007 to a member of the commission's Division of Energy Market Oversight alleging "a clear infringement of MMU independence and a violation of the Tariff Attachment M," he had softened his criticism in his response to the commission's data request. Instead, he said that he was concerned that "left unchecked, such PJM actions [as described at the technical conference] will escalate to the point where PJM would violate the Tariff."

'Systemic Problem'

Bowring had complained the MMU's full-time staff was reduced from 15 to 13 after two employees accepted job offers in the RTO's Markets Department. FERC concluded that the employees left because of their expertise in the development of cost-based rates, a function that PJM had recently assigned to the department.

The commission cited emails in which Bowring accused Andy Ott, then PJM's vice president of markets, of threatening one of the MMU employees if he refused to transfer. But FERC said PJM human resources interviewed the employee and "reported that the transferee did not feel intimidated" by RTO management or Ott, now CEO, "and, in fact, agreed that the cost-based rates function should properly be in the Markets Department."

The commission also looked into Bowring's allegation that Zibelman ordered him to remove from the 2005 State of the Market report his conclusions regarding an absence of structural competition in the regulation market. Bowring's analysis ultimately was included in the final SOM report, although without his earlier conclusion.

"It is unclear whether PJM was attempting to influence Dr. Bowring to alter his conclusion, or whether it was simply trying to make sure his revised analysis was sound," the commission said.

FERC concluded that there was a "systemic problem in the relationship between Dr. Bowring and PJM management, as well as a fundamental disagreement between them as to the appropriate balance between independence and accountability of the MMU."

Commission 'Has Not Looked Very Hard'

The Organization of PJM States Inc. (OPSI), which represents state regulatory commissions, filed a request for rehearing of the order, criticizing the "scant" record developed by FERC and calling for a broader probe in which the state commissions would take part.

"OPSI simply has not been permitted to look into these allegations at all, and the commission has not looked very hard," it said.

"It is clear from the record that does exist that PJM has engaged in a pattern of conduct with the express intention of interfering with the independent operation of its MMU, conduct which does violate both PJM's Attachment M and general commission policy."

OPSI said PJM's questioning of the two employees who transferred from the MMU was insufficient and that they should be interviewed "away from the senior RTO management upon whom the livelihood of such employees depends … to fully establish whether MMU personnel were pressured to leave the MMU."

The regulators also cited evidence of a "secret internal set of procedures" governing the implementation of Attachment M.

"These procedures specifically intend to muzzle the MMU. ... These procedures were and are wholly incompatible with any notion of independence and subject the PJM market monitor to detailed day-to-day review, objection and the exercise of editorial powers by PJM senior management in the smallest matters, effectively placing the PJM market monitor directly under the day-to-day control of [Zibelman] and requiring the market monitor to seek prior approval for almost any significant action or communication."

— Rich Heidorn Jr.

SPP NEWS

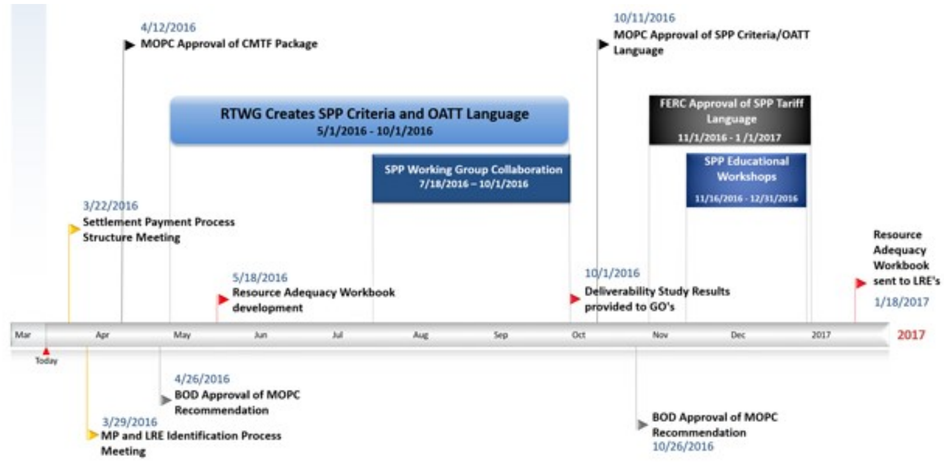
Capacity Margin Task Force Prepares to Hand off its Work

The SPP Capacity Margin Task Force conducted its penultimate meeting last week as it continues to set up the stakeholder group that will replace it in determining how low the RTO can go with its planning reserve margin.

The task force won board and member approval in April to lower SPP's planning reserve margin — previously called the capacity margin — from 13.6% to 12%. The change is expected to save load-serving members about $86 million a year in capacity costs. (See "Lowered Reserve Margin Promises $86M in Annual Savings," *SPP Board of Directors Briefs*.)

The CMTF will hold its last meeting June 30, turning over its work to the newly created Supply Adequacy Working Group (SAWG). The group will be responsible for developing and implementing processes that ensure "reliable supply of capacity necessary to meet demand and planning reserve margin requirements/methodologies in SPP."

The SAWG will also be tasked with ensuring SPP's processes and policies meet NERC and North American Energy Standards Board standards.



Implementation timeline *Source: SPP*

A separate small group is continuing its work on staff's Resource Adequacy Workbook (RAW). The workbook will be used to gather load-serving entities' planning reserve margin requirement calculations and data needed for the Energy Information Administration's Form 411 (Coordinated Bulk Power Supply and Demand Program Report).

SPP's vice president of engineering, Lanny Nickell, asked the task force for additional input on calculating planning reserve margin requirements for purchases and sales, which are calculated differently than they are for the EIA 411.

— Tom Kleckner

FERC NEWS

10 Years After: FERC Conference Focuses on Grid Resiliency

By Rory Sweeney

While FERC's technical conference last week was ostensibly focused on reliability, resiliency became the theme as many panelists agreed: It's not possible to avoid a major grid disruption forever (AD16-15).

Speaking from recent experience, **Miranda Keating Erickson**, vice president of operations for the Alberta Electric System Operator (AESO), put a fine point on it.

"We must remember that no amount of standards can prevent all events from happening that will impact the reliability of our electricity system. Snow storms will happen. Ice storms will happen. Tornados and hurricanes will happen. As I well know, floods and wildfires will happen," she said, referring to the Fort McMurray wildfire, which has destroyed 2,400 homes and buildings and caused the largest wildfire evacuation in the province's history since it began May 1.

"And let's not kid ourselves; at some point, somewhere, cyber and physical attacks will happen. That means resiliency is just as important as prevention. It is critical that we also focus on our ability to minimize impacts and improve response and recovery time when these events do occur."

FERC called the conference to mark the 10 years since Congress gave the commission the power to impose mandatory reliability standards. The commission asked speakers to identify the accomplishments of the last decade and the challenges of the future.

Weather vs. Operational Failures

Gerry Cauley, CEO of NERC, which was designated by FERC to develop and enforce the standards, started the conference by noting that the 10 largest grid "integrity events" each year from 2012 through 2015 were caused by weather. The last operational issue to make the list was in September 2011.

Cauley, however, cautioned that the shift to natural gas and intermittent generation will require renewed focus on issues such as ramping, frequency control, voltage control and inertia. "As we move forward with this evolution, however, we are experiencing a change of operating characteristics for the grid," he said.

He highlighted measures being recommended by NERC's Essential Reliability Services Task Force that would provide better monitoring and control of frequency and voltage.

Gas Dependence

Others agreed that the increasing dependence on natural gas generation is impacting grid stability.

FERC Commissioner **Tony Clark** noted that it's a "challenging prospect to conceive how those [gas] assets can be physically protected."

Paul Koonce, CEO of Dominion Generation Group, who spoke on behalf of the Edison Electric Institute, urged the importance of building out the necessary natural gas infrastructure, including long-haul pipelines, to ensure the gas can be moved easily.

Paul Stockton, the managing director of D.C.-based consulting firm Sonecon, thanked FERC for its recent reports on the interdependence of the natural gas and electricity industries, calling them "terrific work."

"I would ask you to continue to focus on the challenges of the resilience of black-start capabilities … [and] the increasing reliance of many companies on natural gas as a source of fuel for their generators," said Stockton, former assistant secretary of defense for homeland defense. "This, my friends, deserves careful attention."

Physical Security, Cyber Threats

Stockton was among several speakers who noted growing concerns with cyber and physical security. Cauley cited the threat of a physical attack on infrastructure as his greatest worry "because of the potential long-term impact and the difficulty recovering, possibly lasting weeks and months." (See *Critics: Koppel Doomsday Scenario Ignores Prep*.)

Patricia Hoffman, the Energy Department's assistant secretary for electricity delivery and energy reliability, said the growing impact of distributed energy resources has created new needs. "The need for new metrics, new kinds of data and new data-sharing protocols is just as important at the distribution level as at the bulk-power level," she said. "In fact, this need is probably more challenging than at the bulk-power level, if only because we are starting from a less developed base.

"The grid is the battery for the system. It's basically the backup for the system," she said. She voiced concern that security threats will be "malicious in nature" and not addressed simply by preparing for N-1 contingencies. "Unfortunately, these investments are not valued by the market."

Clark expressed hope that NERC's cost-effectiveness method pilot program will result in new strategies. "Personally, I hope [it] will lead us to some important discoveries regarding how costs can be better contemplated and assessed in the standards-development process."

Koonce also supported many of NERC's recommendations and counseled that FERC review issues in a "broad context and with systemwide considerations."

"Corporate strategic and management actions rest on a strong foundation, and decisions are made with great care and deliberation. Application of these business principles to NERC and electric reliability would naturally invite broad long-term

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FERC NEWS

10 Years After: FERC Conference Focuses on Grid Resiliency

Continued from page 22

strategic questions, questions that will very likely yield different answers when compared to looking at day-to-day problems or events, or individual components," he said.

Koonce said that EEI believes version 5 of NERC's Critical Infrastructure Protection standards is an "appropriate and reasonable approach." But, he added, "vendor management risks under consideration by the commission for potential new NERC requirements to address cyber-related asset procurement raises some broad questions on the business risks beyond the control of jurisdictional entities, as well as the reach of commission jurisdiction."

Flexibility was also a big concern for Erickson, who noted AESO's ability to consider NERC standards and decide if they want to adopt them.

For **Joseph Eto**, a staff scientist with Lawrence Berkeley National Laboratory, the question was what's not being considered? "Not all that counts can be counted and not all that can be counted counts," he said, quoting an adage. He urged expanding metrics on interruptions to calculate the economic impacts on customers.

Complexity, Standardization

Carnegie Mellon University professor Marija Ilic summed it up, saying what worries her most is the sheer complexity of the system. The 2003 blackout could have happened anywhere, she said, but also could have been prevented if complexity were handled in more systematic way.

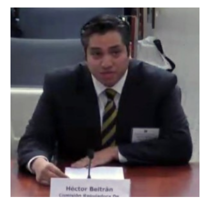
"It's my belief that we're going to have more of those events," she said.

While there was consensus on the importance of maintenance and tree trimming, there was disagreement over whether the industry should standardize equipment. Several industry representatives noted that equipment is sized specifically for its intended use. Arizona State University professor Anna Scaglione, however, said resistance to standardization was as much about lack of vision as engineering — a "cultural problem of industry," she called it, where no one is considering the interoperability of equipment.

Mexico Looking to Interconnect

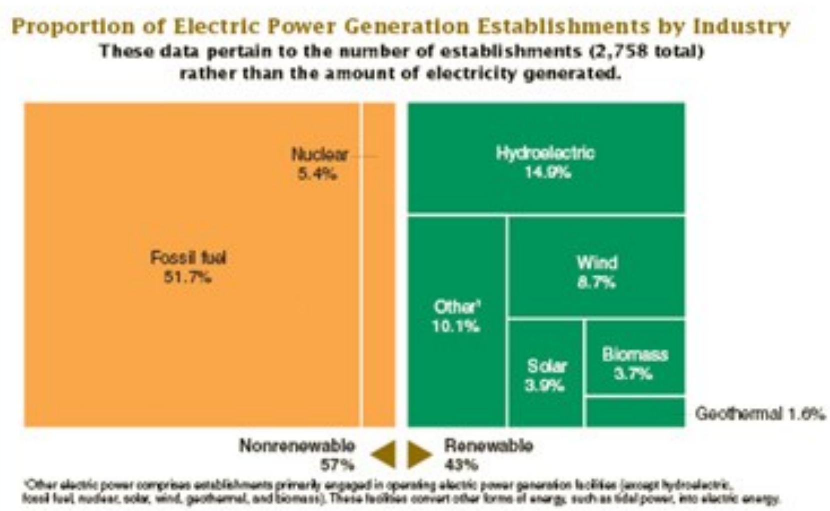
There was also input from the Navy and Mexico.

Chris Murray, the project support lead for the Navy's Renewable Energy Program Office, said the military branch is highly supportive of efforts to increase energy security and is open to having infrastructure projects sited on its properties throughout the country. "If there's land on our base that you think makes sense, let us know," he said. "We are marching down a path that most folks haven't done in the government. … Things are changing and we need your help."



Hector Beltran, the director general of Mexico's Energy Regulatory Commission, said his country is making strides to develop its bulk-power systems and hopes to create a system reliable enough to integrate with the North American system very soon.

Mexico awarded its first round of long-term generation contracts in March, he said, and plans to build a series of interconnections along the border with the U.S. so that the networks can freely interact with each other. He noted that the following day, representatives from both the Mexican and American power industries were meeting in Mexico City to identify collaboration opportunities.



About 43% of the nation's 2,758 electric power generation "establishments" are renewable sites, according to the U.S. Census Bureau's County Business Patterns report. More than half of the renewable locations are in the 10 states in green. However, only 13% of the electricity produced in the U.S. during 2015 came from renewables, according to the Energy Information Administration. *Source: U.S. Census Bureau*

Riverstone to Acquire Talen in $1.8B Deal

By Rory Sweeney

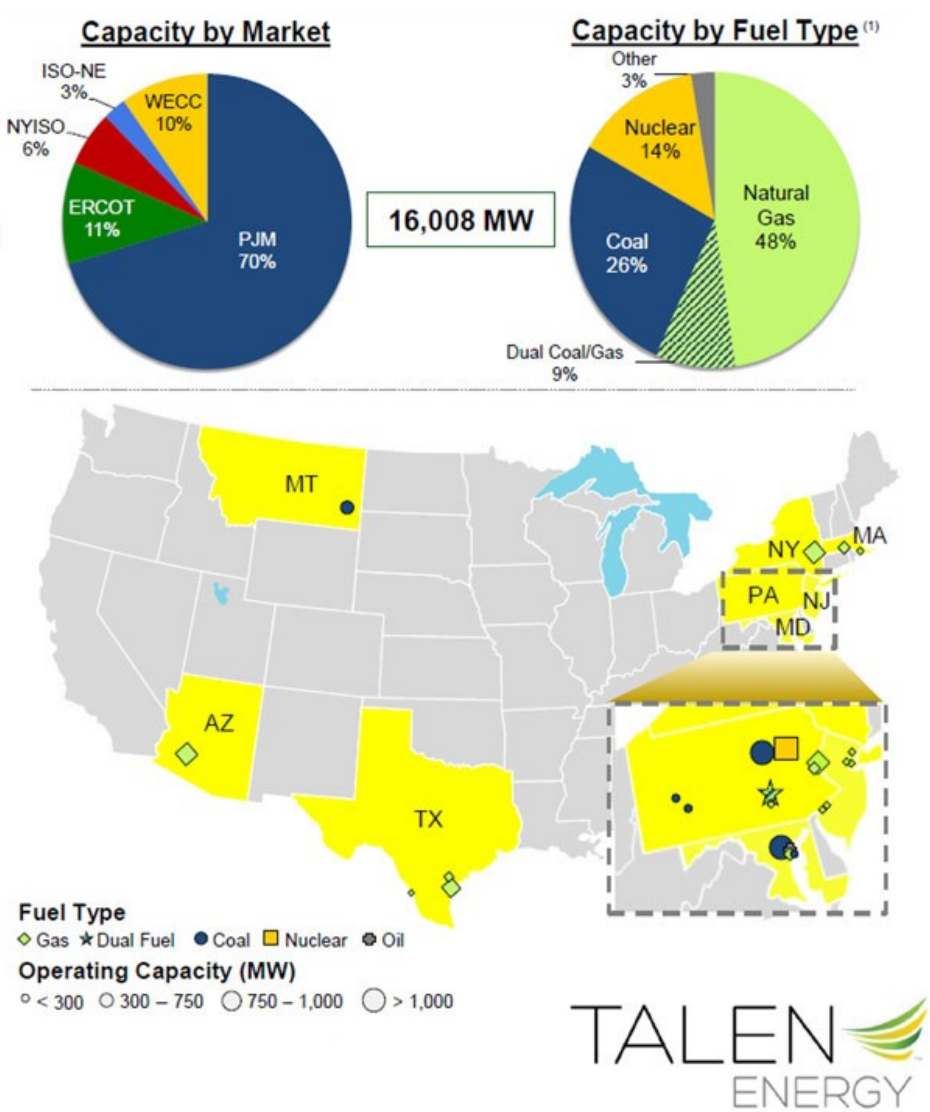
Barely a year after it went public as an independent company, Talen Energy is going private.

The company announced Friday that it had agreed to be acquired by Riverstone Holdings, which is offering $14/share in cash for the company's outstanding shares, a $2 premium to the closing price Thursday. While the total cost of the stock will be approximately $1.8 billion, the deal has a total value of approximately $5.2 billion including assumed debt. It is expected to close by the end of the year.

Talen was formed last June from the merger of PPL's generation assets with some of Riverstone's power plants. Through its affiliates, Riverstone already owns a 35% stake in the Allentown, Pa.-based competitive power producer, which owns or controls 16 GW of capacity in eight states. Most of Talen's capacity — which is divided between gas (47%), coal (39%) and nuclear (14%) — is in PJM and ERCOT.

Tough competition and tight profit margins battered Talen's valuation from the beginning, and analysts saw Riverstone's move as a chance to buy the assets at a bargain.

Formed during a period of historically low natural gas prices, Talen's stock started to drop the day it hit the exchange and never fully recovered, losing more than half its initial value of $21.23/share within five months. On news of the deal, Talen's stock — which had been rising amid rumors of the deal — jumped nearly $2/share to settle just shy of the $14 Riverstone is offering.



Source: Talen Energy

Talen noted in its announcement that the purchase price represents a 56% premium to the closing price of $9/share on March 31, 2016, the last trading day before public reports of the potential sale CEO Paul Farr said the deal "offers compelling value to our stockholders."

The agreement provides a 40-day period for Talen to find a better deal and another 20 days to enter into a transaction. Should Talen accept a superior proposal during the "go-shop" period, Talen will pay $25 million to Riverstone. Otherwise, its cost to terminate the agreement for a superior proposal will be $50 million.

The deal is being funded by conversion of Riverstone's existing Talen stock, Talen's cash on hand and a $250 million new secured-term loan.

In a research note Friday, UBS Securities suggested Talen shares might rise further on expectations of a better offer.

"With a relatively small go-shop fee and even more secured debt capacity … we would not be surprised to see shares even trade above $14," UBS said.

UBS said Talen fared worse than its peers in last month's PJM capacity auction, with fewer assets clearing than last year. It estimated that Talen's PJM capacity revenue will decline by $230 million to $320 million.

The deal is subject to approval by FERC and the Nuclear Regulatory Commission as well as the 65% non-Riverstone shareholders.

"The scenario under which a deal might not be approved [by shareholders] is if commodities rallied prior to shareholder approval date such that the bid was no longer commensurate with the market environment," UBS said.

But the analysts said shareholders are unlikely to see another suitor willing to pay more because other independent power producers already have concentrations of generation that would likely trigger market power screens.

Talen's coal generation is anathema to Calpine, and its Susquehanna nuclear plant is likely to scare off anyone not already running a nuclear fleet, UBS said. Dynegy and NRG Energy are in restructurings and unlikely to be able to make a purchase, they added.

"Despite the argument that the company is being bought effectively using its own liquidity and leverage capacity, we do not see an obvious outside bidder desiring to pay such a premium," they said.

Company Briefs

Dynegy's Wood River Plant Closes, 90 Jobs Eliminated

Dynegy has closed its 500-MW Wood River Power Station near Alton, Ill., eliminating more than 90 jobs.

Company officials announced plans to close the coal-fired plant in November after it failed to recover operating costs. The utility cited unfair market conditions in the deregulated and regulated hybrid footprint in MISO. Dynegy also said Wood River was not necessary to maintain reliability in the region.

In addition to $12 million in lost pay for the workforce, the closure will cost the local government $1.6 million in lost property taxes.

More: *The Telegraph*

Appalachian Power Enters PPA with NextEra Wind Farm

American Electric Power's Appalachian Power has signed on to a 20-year power purchase agreement with NextEra Energy to buy 120 MW of wind generation in Indiana to supply its service areas in Virginia and West Virginia by 2018.

The wind power will come from the Bluff Point Wind Energy Center to be constructed in Jay and Randolph counties in Indiana. The company selected NexEra's proposal over a dozen other bids.

The agreement brings Appalachian Power's total wind portfolio to 495 MW.

More: *Appalachian Power*

CIO Cavazos Leaving DTE for Investment Firm

DTE Energy Chief Investment Officer Paul Cavazos is leaving his position at the diversified energy company to join Texas-based American Beacon, an investment firm specializing in mutual funds and corporate pension plans.

Cavazos worked at DTE Energy for nearly nine years, managing about $10 billion in investments, including benefit and contribution plans, a foundation and a nuclear decommissioning trust.

More: *Chief Investment Officer*

Alliant Treasurer Kratchmer Announces Retirement

Kratchmer

Alliant Energy Vice President and Treasurer John Kratchmer announced plans to retire last week.

Robert Durian, Alliant's current controller, will take over Kratchmer's duties July 1. Kratchmer will serve in an advisory role during a transition period, according to the company. Durian has been with the company since 1992.

Alliant Assistant Controller Ben Bilitz will fill the position of controller.

More: *Alliant Energy*

Broadwind Signs $137M Manufacturing Contract

Wind turbine manufacturer Broadwind Energy has been awarded a three-year $137 million supply deal with an unnamed customer.

Broadwind, which has factories in Manitowoc, Wis., and Abilene, Texas, would say only that its customer is one of the largest wind turbine manufacturers in the U.S. Siemens and General Electric are among Broadwind's major customers, according to a 2015 annual report.

More: *Milwaukee Journal Sentinel*

Thousands of PG&E Computers Left Vulnerable

Pacific Gas and Electric last month left a "treasure trove" of company data open to Internet hackers, according to a security researcher who revealed the lapse.

The compromised database contained company IP and MAC addresses, hostnames, computer locations and other vital information. More than 47,000 PG&E computers and other devices were left unprotected, the researcher said.

PG&E confirmed the lapse, blaming it on a third-party technology vendor that was developing a new platform.

More: *Tech Insider*

Municipal Utilities Sign Up with Grain Belt Express

The Missouri Joint Municipal Electric Utility Commission, which buys power for public utilities, said it has signed an agreement for as much as 200 MW of capacity on Clean Line's Grain Belt Express, bolstering the transmission line's embattled application with the Missouri Public Service Commission.

The new contract, which is contingent on Clean Line winning approval from Missouri regulators, would replace an electricity contract with Dynegy coal plants expiring in 2021, when Grain Belt is supposed to be operational.

The 780-mile transmission line would carry 3,500 MW of wind power from western Kansas to eastern markets and up to 500 MW of power into Missouri.

More: *St. Louis Post-Dispatch*

Keeping Westar's HQ in Topeka Key to Great Plains' Acquisition

Westar Energy CEO Mark Ruelle said Great Plains Energy was the only bidder among multiple suitors that agreed to keep the utility's headquarters in downtown Topeka, Kan., one of the deciding factors in choosing it as its $8.6 billion merger partner.

Although an investor-owned company must first consider shareholder value, Ruelle said, Great Plains' offer to stay true to Westar's commitment to employees and its philanthropic efforts in the Topeka community weighed in its favor. The merger was announced May 31.

"It's turned out that after all the work, the best deal is with our next door neighbors," he said. "They've agreed to keep Westar headquarters in Topeka, and not only that, in downtown Topeka. Great Plains has agreed to continue our community commitments, our charitable giving, our connections downtown."

More: *The Topeka Capital-Journal*

FEDERAL BRIEFS

Feds Designate Offshore NY Wind Lease Area

The Interior Department on Thursday proposed a commercial wind lease for 81,130 acres 11 miles off Long Island, an area that the department's Bureau of Ocean Energy Management identified earlier this year. (See *Feds Set Offshore Wind Site near New York*.)

"This is another major step in broadening our nation's energy portfolio, harnessing power near population centers on the East Coast," Interior Secretary Sally Jewell said.

The notice for the proposed lease includes a 60-day public comment period.

More: *Department of the Interior*

Appeals Court Upholds NRC's Onsite Fuel Storage Rule

The D.C. Circuit Court of Appeals on Friday ruled that the Nuclear Regulatory Commission followed all necessary rules when it wrote the regulation allowing long-term storage of spent fuel at nuclear generating stations.

The ruling, which means spent fuel rods can be stored onsite indefinitely, is important because the federal government hasn't yet fulfilled its obligation to develop a site for depleted fuel, despite spending billions at the now-moribund Yucca Mountain site.

The attorneys general of New York, Vermont, Massachusetts and Connecticut had challenged the rule, joined by the Natural Resources Defense Council. Eric Schneiderman, New York's attorney general, vowed to continue the fight.

More: *The Hill*

Clinton Vows Increase in Renewables on Fed Property

Clinton

As Californians go to vote in the state's primary elections, Democratic presidential contender Hillary Clinton is pledging to increase the development of renewable energy projects on federal lands and water if elected.

"Now, as we work to combat climate change and build America into the world's clean energy superpower, our public lands can once again play a key role in unlocking the resources we need," Clinton wrote in a piece published in *The Mercury News*. "While protecting sensitive areas where development poses too great a risk, we can accelerate our transition to a clean energy economy by increasing renewable energy generation on public lands and offshore waters tenfold within a decade."

More: *The Hill*

NRC to Review Entergy's Response to Baffle Bolt Issue

The discovery of the failure of more than a quarter of the bolts used to secure baffles crucial to channeling cooling water in Entergy's Indian Point 2 reactor has spurred an investigation into what caused it and what the company is doing in response.

"We will review Entergy's analysis and plans before deciding if the company's proposed course of action is acceptable," Nuclear Regulatory Commission spokesman Neil Sheehan said.

The Indian Point discovery prompted another operator, PSEG Nuclear, to inspect its Salem 1 reactor, where it found that 18 of that reactor's baffle bolts were degraded.

More: *The Huffington Post*

Navy Looking at SMRs To Provide Base Power

The Navy is looking to expand its nuclear operations from shipboard reactors to onshore locations.

Secretary Ray Mabus said he wants the Navy Department to look at the possibility of employing small modular reactors to provide power for shore installations. "With some of the new technology that's coming along, it's much safer, produces far less residue and nuclear waste, and it is an option that I think we should explore," he said.

The Navy and the Marine Corps set a goal in 2009 of getting more than 50% of its shore power from alternative sources. Using solar, wind, geothermal and hydro, they met that goal at the end of last year.

More: *Federal News Radio*

FERC Approves $2 Billion Kinder Morgan LNG Project

FERC approved Kinder Morgan's proposed $2 billion LNG export terminal on Elba Island near Savannah, Ga.

The first units will come online in early 2018 and eventually the terminal will liquefy up to 350 Mcfd. Kinder Morgan has a 20-year contract to supply Royal Dutch Shell.

Kinder Morgan already has an import terminal at Elba Island, built in the 1970s, but it has seen little use since domestic natural gas supplies expanded with the shale-gas revolution. The terminal has 11.5 Bcf of LNG storage capacity and 1.76 Bcfd of peak vaporization send-out capacity.

More: *FuelFix Blog*

EPA Orders 2 Utah Plants To Install New Controls

EPA decided Wednesday that two Rocky Mountain Power coal-fired plants must install pollution controls to improve atmospheric visibility near national parks. The company, which said it would cost $700 million to comply with the ruling, said it is reviewing its legal options.

The agency's ruling, and its Regional Haze Rule, are aimed at restoring natural air conditions at 156 national parks and wilderness areas by 2064.

Utah officials said the goals can be reached less expensively by following its own regulations. Part of the state-sponsored plan was to shut down one of the company's plants. But EPA ordered selective catalytic reduction systems installed at the two remaining coal-fired plants in Emery County.

More: *Salt Lake City Tribune*

Study Calls for 'Proactive' Transmission Planning

A report released Monday by a trade group for the transmission industry calls for a new "proactive" approach to transmission planning, saying it could save consumers as much as $47 billion annually.

The report, prepared for WIRES by The Brattle Group, says traditional planning, focused primarily on addressing reliability issues over a five- to 10-year horizon, is too myopic and results in "piecemeal projects instead of developing integrated and flexible transmission solutions that enable the system to meet public policy goals more cost effectively."

The paper says a more proactive approach is desirable regardless of whether generation changes because of energy markets, technology or EPA's Clean Power Plan.

More: *WIRES*

STATE BRIEFS

REGIONAL

CO2 Allowance Sale Raises $68.3 Million

The nine Northeastern and Mid-Atlantic states that participated in the 32nd Regional Greenhouse Gas Initiative auction of carbon dioxide allowances on Wednesday sold more than 15 million at a clearing price of $4.53.

Bids for an allowance, which allows for the emission of one ton of CO_2, ranged from $2.10 to $12.65 each. It was the second of four quarterly auctions of 2016 and generated $68.3 million for energy efficiency, renewable energy and other programs in the member states.

Cumulative proceeds from all RGGI CO_2 allowance auctions since 2008 exceed $2.5 billion.

More: *Regional Greenhouse Gas Initiative*

CALIFORNIA

Aliso Canyon Shutdown Prompts SCE Energy Storage Procurement

State regulators have ordered Southern California Edison to expedite procurement of large-scale energy storage to deal with possible service interruptions stemming from the closure of the Aliso Canyon gas storage facility.

The utility's request for offers states that straight storage projects must be a minimum of 500 kW, and a separate "design, build and transfer" category seeks projects capable of delivering four hours of energy in increments of 5, 10, 15 and 20 MW.

Projects must be grid-connected, meaning behind-the-meter storage is excluded. SoCalEd is expected to select winners by mid-September, with Dec. 31 being the deadline for commencing operation. The Public Utility Commission acknowledges the timelines could be too aggressive.

More: *Greentech Media*

COLORADO

Boulder Intervenes in Xcel's Plans for $1B Wind Farm

The City of Boulder and more than a dozen other agencies and government bodies have asked to intervene before the state Public Utilities Commission in Xcel Energy's bid to build a $1 billion wind farm. The Rush Creek Wind Project would cover 90,000 acres in the state and would be among the state's largest wind energy producers.

Boulder, which is engaged in an ongoing dispute with Xcel before the PUC over its municipalization efforts, said its primary contention is that Xcel filed the wind farm application more than two weeks before filing its electric resources plan (ERP), which sets what facilities it will need in order to serve its customers. "Our issue is that we think that this proposal should be evaluated in the context of the ERP," said Boulder spokesperson Sarah Huntley.

The connection of the wind farm to Boulder's efforts to take over Xcel's assets is indirect, Huntley said. "The only linkage to municipalization we're making is that the amount of energy they need to be able to provide could change if the city is no longer drawing our energy from them," she said.

More: *Daily Camera*

CONNECTICUT

United Illuminating to Seek Rate Increase

United Illuminating will file for stepped-in annual increases of about $9/month for each of the next three years later this summer.

The company told the Public Utilities Regulatory Authority on Wednesday that it needs $141 million in new revenue to pay for ongoing modernization of its distribution network, tree trimming and infrastructure improvements.

Regulators froze rates until 2017 as a condition of its approval of UI's merger last year with Iberdrola USA to form Avangrid.

More: *New Haven Register*

IOWA

Dakota Access Gets Partial Approval from IUB

The Utilities Board allowed the Dakota Access Pipeline to proceed on parts of the route not covered by federal authority. It is the last state regulatory body to get aboard the $3.8 billion, 1,168-mile pipeline to deliver crude oil from North Dakota to Illinois.

Some obstacles remain for project developer Energy Transfer Partners. The state chapter of the Sierra Club filed a suit to block the pipeline, along with some local landowners and Native American tribes.

Energy Transfer Partners says it has received permission from 96% of the landowners along the route. It is awaiting approval from the U.S. Army Corps of Engineers to work on 2.5% of the route it controls.

More: *Bismarck Tribune*

MARYLAND

PSC Rejects Bulk of BGE's Rate Increase Request

The Public Service Commission will allow Baltimore Gas and Electric to raise its rates for gas and electricity by $89.5 million, about 40% of the utility's request of $224.5 million.

The new rates will increase monthly bills by $2.67 for electricity customers and $4.86 for gas customers. Had the PSC granted the full request, customers would have seen a bump of $7.05 for electricity and $8.01 for gas.

The commission denied BGE's request for a bill surcharge to cover an increase of $30.7 million in conduit fees for the City of Baltimore.

More: *Maryland Public Service Commission*

MICHIGAN

Senate Fails to Vote on Energy Bill

The Senate adjourned last week without voting on a utility-supported package of bills to reform the state's energy market.

Senate Majority Leader Arlan Meekhof said most legislators were unfamiliar with the complicated legislation and it was too much for them to digest. "For folks that don't serve on the committee and aren't engaged in this every day, it's a lot of stuff," he said.

The bill aims to cut emissions 35% by 2025 through increased use of renewables, to give the Public Service Commission control

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in utilities' rate changes and to place restrictions on alternative energy suppliers. Businesses, schools and government agencies say the legislation would remove the state's retail choice, currently capped at 10%.

More: *The Detroit News*

Anti-fracking Petition Falls Short Before Deadline

The Committee to Ban Fracking collected about 82% of the 252,523 signatures it needed to get an anti-fracking measure on the ballot for November's election before a deadline expired.

The group says it will sue to challenge the constitutionality of a 180-day limit for petition signature drives. It says it will continue to collect petitions in hopes of getting the measure on the 2018 ballot.

But under a bill recently passed by the House and Senate, the 207,000 signatures already gathered would be considered "stale" and the group would have to start over. Gov. Rick Snyder has yet to sign the bill, however.

More: *MLive*

MISSOURI

PSC Declines to Study Grid Modernization Bill

The Public Service Commission decided not to vote on opening a working case that would have studied the impacts of a bill that has stalled in the General Assembly.

The bill would dramatically change ratemaking for utility companies, with Chairman Daniel Hall calling it "a radical departure from 100 years of ratemaking." But the legislation was filibustered in the Senate.

Another factor in the PSC's decision to pull the vote from the agenda was Ameren Missouri, which said it would not participate in the working case for fear that it could be used against it in future rate cases.

More: *The Missouri Times*

NEBRASKA

Wind Project on Hold Over Local Opposition

A second wind farm in the state has been put on hold after it attracted public opposition. The Cherry County Planning Commission has delayed consideration of a 50-MW farm planned by Bluestem Sandhills, pending a review of public notice requirements.

The commission delayed a vote on a conditional use permit until it can decide whether the state Game and Parks Commission, which operates the nearby Cowboy Trail, should have been informed of the meeting. That legal review could take a few weeks, officials said.

Consideration of a 350-MW farm near Brunswick was also postponed to allow for more consideration of testimony about the project.

More: *Omaha World-Herald*

NEW JERSEY

PSE&G's Solar Farm Plan Draws Mixed Reactions

Public Service Electric and Gas' $275 million plan to add 100 MW of solar power through 10 new solar farms has drawn kudos from environmentalists, but others are concerned about the potential effect on solar credits.

Part of the company's Solar 4 All program, the farms will be sited on old landfills and industrial brownfields.

PSE&G's application includes a 10% guaranteed rate of return. "PSE&G is asking ratepayers to assume the risk for this solar generation," said Stefanie Brand, director of the Division of Rate Counsel.

More: *NorthJersey.com*

NORTH DAKOTA

Ground Broken on State's Largest Community Solar Farm

State officials broke ground last week on the state's largest solar array, near Fargo. The 102-kW project has 324 panels, with room on the 350-by-150-foot lot to double in size if demand from Cass County Electric Cooperative increases.

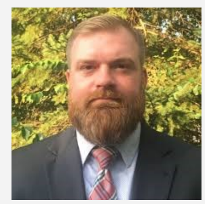
The co-op received a $140,000 grant from the state Commerce Department, much of which came from the federal Department of Energy. That subsidy cut the project's cost by 58%.

About 70 co-op members have purchased panels, and applications from 100 more members are in the works, said Paul Matthys, Cass County Electric's vice president for member and energy services. The solar array will produce an estimated 142 MWh a year.

More: *The Forum of Fargo-Moorhead*

OHIO

Sierra Club Director Among 19 Applying for PUCO Seat



Sawmiller

Daniel Sawmiller, senior representative with the Sierra Club's Ohio Beyond Coal campaign, is one of 19 applicants for a vacancy on the five-member Public Utilities Commission. Others to apply included State Rep. Dave Hall and a Columbus utilities attorney, Howard Petricoff.

Sawmiller was a vocal opponent of both the FirstEnergy and AEP Ohio power purchase agreements and eventually joined in a settlement for the AEP plan after the company vowed to commit resources to renewable energy.

The 19 will be interviewed by the PUCO nominating council by June 16, and four finalists will be forwarded to Gov. John Kasich for consideration.

More: *Columbus Business First*

OKLAHOMA

Newspaper Questions OPPD Decision to Restart Nuke

Current and former Omaha Public Power District executives defended their decision to continue to invest in the Fort Calhoun nuclear plant, even as all market signals pointed to nuclear power being uncompetitive in the face of declining natural gas prices.

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STATE BRIEFS

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The *Omaha World-Herald* interviewed eight current and three former OPPD board members, questioning why the utility sunk $300 million in an effort to restart Fort Calhoun in December 2013 only to conclude last month that the plant "is not financially sustainable." The board is expected June 16 to vote on a recommendation to close the plant by the end of the year. (See *Omaha PPD Recommends Closing Fort Calhoun*.)

More: *Omaha World-Herald*

PENNSYLVANIA

Judge: Drilling Critics' Speech is Protected

A judge struck down a lawsuit by natural gas leaseholders who said anti-drilling activists had interfered with their rights by filing an unsuccessful legal challenge that they said had caused costly delays.

Judge Michael Yeager of the Butler County Court of Common Pleas ruled that the critics' objections to a pro-drilling ordinance were protected by the right to free speech.

The decision does not affect the judge's previous order in which he rejected the environmental group's challenge and upheld the town's zoning ordinance, which opened up nearly much of the township to potential shale gas drilling.

More: *State Impact*

PUC Takes Aim at Unlicensed Electricity Supplier

Public Utility Commission investigators have filed its first formal enforcement action against a power broker operating without a license.

Electricity supplier Fair View Energy, based near Erie, has signed up hundreds of commercial customers. Investigators say the supplier's principals should have known they needed a license, as they've worked for other suppliers.

The commission's enforcement arm is seeking $89,800 in civil penalties as well as refunds of fees paid by customers.

More: *The Philadelphia Inquirer*

VIRGINIA

Archeologists Uncover Artifacts In Path of Mountain Valley Pipeline

Archeologists surveying properties in the path of the proposed Mountain Valley Pipeline in Franklin County have found a trove of Native American artifacts, calling into question the job done by archeologists hired by the pipeline company.

The Mountain Valley Pipeline is a proposed $3.5 billion, 301-mile pipeline to transport natural gas from West Virginia through five Virginia counties to feed into a larger pipeline.

Pipeline opponents hope that the discovery of the artifacts may help them obtain historic designations for properties and impede the pipeline. The artifacts include arrowheads, tools and pottery shards.

More: *The Roanoke Times*

Dominion Virginia Power Advances Coal-Ash Storage Project

State regulators last week issued a draft of one of two permits Dominion Virginia Power needs to store more than a million tons of coal ash at the site of a defunct power plant in Chesapeake, the state's third most populous city.

The draft of the other permit is expected to be issued this week.

Meanwhile, Chesapeake officials are fighting to have a say in how the site is regulated, and Dominion is battling a federal lawsuit by environmentalists who say the ash should be removed, not stored onsite.

More: *The Virginian-Pilot*

WASHINGTON

Seattle Passes Resolution Opposing Nuclear Power

The Seattle City Council has passed a resolution calling for its city-owned utility to seek power from non-nuclear sources and push provider Energy Northwest to investigate non-nuclear, carbon-neutral sources.

Energy Northwest operates the Columbia Generating Station, the region's only nuclear station. Its power goes to the Bonneville Power Administration, which supplies about 4% of the Seattle City Light Department's electricity.

The company says the council only heard one side of the story before its vote. "They just got a lot of really bad information that went unchallenged and, unfortunately, they acted on it," a company spokesman said.

More: *Tri-City Herald*