RTO Insider

Your Eyes and Ears on the Organized Electric Markets

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

ISSN 2377-8016 : Volume 2016/Issue 12 March 29, 2016

DOE Agrees to Join Clean Line's Plains & Eastern Project

By Tom Kleckner

The dream of transporting wind energy east from the Great Plains took a major step toward reality Friday with the U.S. Department of Energy's approval of Clean Line Energy Partners' Plains & Eastern project.

The Energy Department issued a record of decision, saying it would "participate in the development" of the 700-mile, HVDC transmission project and designated a preferred route through Oklahoma and Arkansas. The decision caps nearly six years of study and evaluation by the department. Clean Line says the $2.5 billion, privately funded project will deliver 4,000 MW of wind power — enough to power more than 1 million homes — from the Oklahoma Panhandle through Arkansas to the Mississippi River. The Plains & Eastern line would interconnect with the Tennessee

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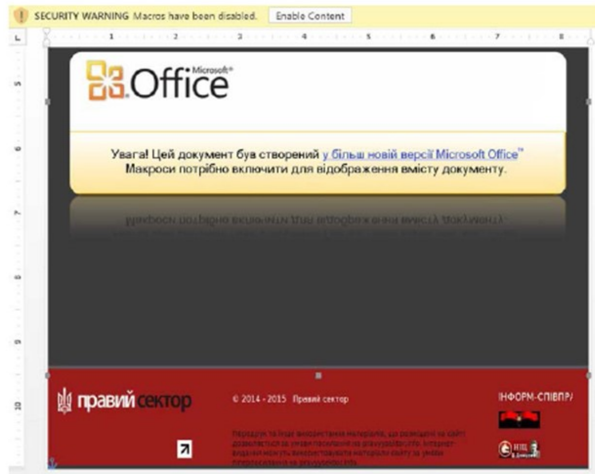
How a 'Phantom Mouse' and Weaponized Excel Files Brought Down Ukraine's Grid

By Rich Heidorn Jr.



Ukrainian Word file infected with BlackEnergy 3 malware *Source: NERC, SANS Institute*

Sometime last spring, employees of three Ukrainian electric distribution companies opened Microsoft Office files infected with BlackEnergy 3 malware. It was the beginning of a six-month campaign of reconnaissance and testing that culminated Dec. 23 with an outage that knocked out power to 225,000 customers for several hours.

The story of the cyberattack — the first publicly acknowledged assault to cause power outages — was spelled out in riveting detail in a report released last week by NERC's Electricity Information Sharing and Analysis Center.

The Security Service of Ukraine blamed the attack on the Russian government. But the report, the product of NERC's E-ISAC and the SANS Institute, focused on the methods of the attack and not on identifying the attackers.

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MISO Proposes Adding Forward Auction for Retail Choice Zones

By Amanda Durish Cook

NEW ORLEANS — Deregulated markets in MISO would get a three-year forward capacity auction beginning in 2018, under a proposal unveiled by the RTO last week.

Dynegy's Baldwin Energy Complex in southern Illinois. Some generators in retail choice regions of MISO such as southern Illinois have exported their power to PJM, where capacity prices have been higher. *Source: MISO*

The RTO announced the proposal after reviewing stakeholder recommendations for addressing the capacity needs of retail choice regions such as southern Illinois' Zone 4. (See *PJM-Type Capacity Auction for MISO Zone 4 Proposed*.)

"It is now evident MISO's markets … need to effectively and efficiently signal the need to maintain existing and/or invest in new resources necessary to assure resource adequacy in competitive retail areas that rely exclusively on markets," MISO said. "Given the existing [Planning Resource Auction] was not designed to meet this need, narrowly focused reforms are required to complement the existing market construct while also preserving the benefits currently derived by most of MISO's region from simple capacity balancing."

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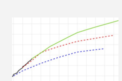
Also in this issue:



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How a 'Phantom Mouse' and Weaponized Excel Files Brought Down Ukraine's Grid

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Based on a summary of publicly available information and analysis performed by the SANS Industrial Control Systems unit, the report contains recommendations for defending grid operations.

The report's authors express also grudging respect for the expertise of the hackers. "The strongest capability of the attackers was not in their choice of tools or in their expertise, but in their capability to perform long-term reconnaissance operations required to learn the environment and execute a highly synchronized, multistage, multisite attack," the report said.

Spear Phishing

The report estimates that the blackouts came more than six months after the initial penetration of the companies, when employees in the administrative or information technology networks of the electric companies opened Microsoft Excel and Word documents from spear phishing emails.

The employees enabled macros in the files that allowed the installation of BlackEnergy 3 malware on the companies' systems, providing access to command and control Internet Protocol addresses.

After gaining a foothold in the companies' IT networks, the hackers were able to obtain credentials that gave them access through virtual private networks (VPNs) to the industrial control systems (ICSs). The report said the hackers demonstrated expertise in network-connected infrastructure and in operating the ICSs.

They used "rogue" client software and a "phantom" mouse to highjack the supervisory control and data acquisition (SCADA) systems remotely, taking control of operator workstations and locking the operators out of their systems.

Kyivoblenergo, a regional electricity distributor in Ukraine, was one of the three "oblenergos" (energy companies) attacked. Beginning about 3:35 p.m. on Dec. 23, the hackers took remote control of the company's SCADA distribution management system, disconnecting seven of its 110-kV substations and 23 35-kV substations for three hours and cutting off power to about 80,000 customers.

Similar attacks on the other two companies, executed within minutes of each other, blacked out an additional 145,000 customers.

Burning the Bridges

KillDisk software was used to erase the master boot record of the companies' systems and delete some logs, preventing the companies from using the ICSs to restore the system. The attackers also uploaded malicious firmware to serial-to-Ethernet gateway devices, ensuring that even if the operator workstations were recovered, remote commands could not be used to bring the substations back online.

"This means that the attacker 'burned the bridges' behind them by destroying equipment and wiping devices to prevent automated recovery of the system," the report said.

The attackers also generated thousands of automated phone calls to the call center of one of the companies — a version of a denial-of-service attack — to hamper communications with customers.

With their computer systems compromised,

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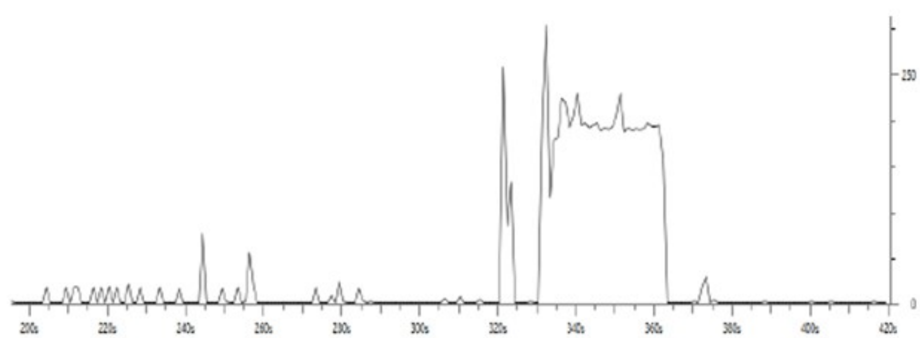

Network traffic surge caused by malicious firmware update to industrial Ethernet switch *Source: NERC, SANS Institute*

CAISO NEWS

CAISO Seeks Rapid Response to Impending Southern Calif. Gas Restrictions

By Robert Mullin

CAISO has kicked off an "expedited" stakeholder process to help Southern California's gas-fired generators mitigate the financial impact of proposed pipeline restrictions stemming from the closure of the Aliso Canyon gas storage facility.

The initiative seeks to identify what measures the ISO can implement to allow those generators to recover — or avoid — penalties for violating new daily balancing requirements that SoCalGas has proposed for the region's pipeline system.

Under the requirements, any customer whose daily gas burn deviates from nominated pipeline flows by more than 5% would face per-unit penalties as high as 150% of daily gas indices. Generators say those penalty costs would put them out of the money in instances when the grid operator's dispatch instructions force their units to burn more or less gas than scheduled.

Leak Forced Closure

SoCalGas and San Diego Gas & Electric asked state regulators to approve the requirements ahead of summer to support reliable gas delivery during the region's peak season for electricity consumption. SoCalGas said it needs more precise scheduling to ensure proper pipeline pressure without the ability to backfill from Aliso Canyon.

The storage facility north of Los Angeles was closed following a leak that spewed massive amounts of methane between October and February.

The new requirements are expected to take effect May 1, pending approval by the California Public Utilities Commission. That makes a rapid response essential for CAISO's most exposed market participants, who worry about the costs they will incur in the period between that date and the implementation of any necessary ISO market mechanisms.

"The gap [in time] could be disastrous for us," said NRG Energy Director of Market Affairs Brian Theaker during a March 23 teleconference to discuss CAISO's response. "We're very concerned about our exposure in that gap."

Aliso Canyon relief well *Source: SoCalGas*

For its part, CAISO supports the tighter balancing requirements as a way to prevent last-minute gas curtailments to generators called on to respond to unpredictable summer cooling loads.

"Depending on the scope of curtailment, the ISO's ability to redispatch might be hindered," said Mark Rothleder, CAISO vice president of market quality and renewable integration.

But CAISO also recognizes the reliability risks that come with the balancing penalties, which could deter some gas-fired units from committing to the short-term market when most needed.

"When it comes to commitment, that's where we see the disconnect," said Erik Johnson, principal energy trader with the city of Pasadena. "It's not the hardest thing to figure out when a unit is going to be out of compliance with SoCalGas."

Better Gas-Electric Coordination

CAISO is taking a twofold strategy in response, considering both ways to prevent pipeline penalties and revised rules to allow generators to recover the fines. Cathleen Colbert, CAISO senior market design and regulatory policy developer, said any solutions will be "interim" — lasting until Aliso Canyon reopens.

The first approach would seek to prevent pipeline penalties through improved coordination of ISO market instructions with gas balancing requirements. That could entail posting a "two-day-ahead" forecast to inform gas procurements as early as possible or moving the day-ahead market to earlier in the day in advance of the timely gas nomination cycle, when supplies are most liquid.

Market participants are skeptical about the effectiveness of those measures.

"The idea of doing a two-day-ahead forecast is appealing," said NRG's Theaker. "But in summer, when loads can get blown pretty high, that could leave you exposed."

Generator participants also point out that earlier gas procurements — even in the day-ahead cycle — would incur additional costs that might not be recovered under current market rules.

"Does the ISO understand that Intra-day Cycle 3 [day-ahead evening gas procurement] requires storage?" said Pasadena's Johnson. "We have the ability to procure for day-ahead, but we'll be paying a premium."

Johnson also noted that, under the new balancing requirements, it will be impossible to economically cover last-minute gas needs in light of a CAISO Tariff provision that caps gas cost recovery at 125% of daily gas indices.

"Get into the second half of tomorrow [real-time], and it's going to be impossible to get gas," Johnson said. "Any dispatch you force on us is going to put us outside the 5%. The 125% [cost cap] doesn't give enough room."

David Francis, vice president of West power for EDF, said it is difficult to obtain gas close to real-time operation, a potential strategy to avoid incurring overscheduling penalties. "The amount of volumes that are traded in the cycles after the daily are fairly limited," he said. "It becomes more challenging to get more [gas] into the [Los Angeles] basin as you get into the cycle."

Market Changes on the Table

CAISO's second approach to the new

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ERCOT NEWS

Texas Commission Approves Oncor REIT Structure

By Tom Kleckner

The Public Utility Commission of Texas on Thursday approved Hunt Consolidated's proposed acquisition of Oncor, the state's largest transmission and distribution utility and the most valuable remaining piece of troubled Energy Future Holdings (Docket # 45188).

The PUC's March 24 order would split Oncor into two companies, one of which would operate as a real estate investment trust (REIT) under the state Public Utility Regulatory Act. The commission gave the parties a Nov. 30 deadline to complete the transaction.

As a REIT, Oncor AssetCo would own the transmission and distribution facilities, while Oncor Electric Delivery Co. (OEDC) would rent the facilities to provide electric delivery services. OEDC would house most of Oncor's management and employees and the remainder of the assets.

Oncor AssetCo would avoid paying federal income taxes as part of the transaction if it derives at least 75% of the its gross income from property rents. Hunt has taken a similar tack with its Sharyland Utilities, which provides services to 53,000 customers, primarily in West Texas and the Rio Grande Valley.

The commission agreed with the proposal, saying "payments received from OEDC, as the lessee and operator of the assets, will constitute rents from real property under the meaning of the Internal Revenue Code."

The plan has drawn criticism from a disparate group that includes former Texas Gov. Rick Perry, a coalition of cities served by Oncor, the AARP and PUC staff. Much of the criticism centers on the REIT conversion and whether it would provide a windfall for the company at the expense of ratepayers.

Two Texas state senators, Kelly Hancock and Royce West, called into the meeting to add their objections, saying the REIT should not be able to collect taxes in its rate structure if it doesn't intend to pay them. The tax benefit is worth about $250 million, and the Hunt group had been looking for a guarantee it could take full advantage of the benefit.

"I am not against the acquisition," West said from China through heavy static. "I understand a REIT has to distribute [funds to shareholders]. The question in my mind is should [the REIT] be allowed to use dollars earmarked for taxes … to shareholders."

The commissioners discussed whether to add a separate accounting treatment for the taxes, with one proposal to immediately credit ratepayers $100 million. However, Chair Donna Nelson stepped in to say adding too many restrictions to the deal might make it unmanageable.

"It sounds like you're punishing them now," she said. "If we're going to deny it, why don't we just deny it? If you're going to keep attaching these things to it, it's going to die anyway. All we're doing is wasting time."

In the end, the PUC's order said the tax-savings issue will be "addressed by commission staff and intervenors in the next rate proceeding of Oncor AssetCo and OEDC."

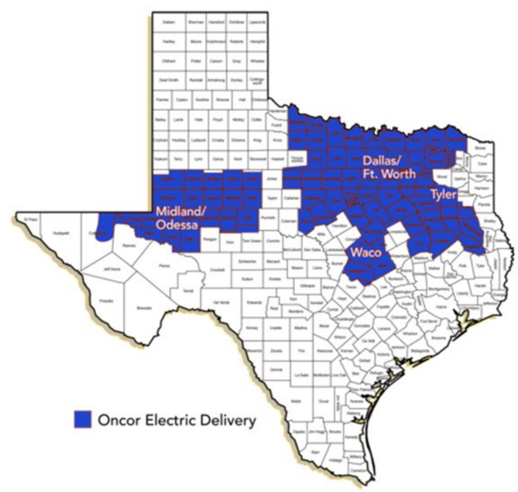
While siding with Anderson and Commissioner Brandy Marquez on the order, Nelson dissented from the majority's decision "regarding the timing and treatment of the income tax expense." Nelson's position throughout the Hunt-Oncor process has been to oppose customer refunds.

Geoffrey Gay, legal counsel for about 150 cities served by Oncor, said he expects his clients to file rate cases by the end of April, bringing about the rate case a year earlier than the current schedule.

Oncor expects the proposed transaction, "if funded by investors," to close on or before year-end.

"While there are a number of hurdles left to clear, we look forward to working with the parties involved to reach a conclusion in this change-in-control proceeding," said Geoff Bailey, Oncor's director of communications, in a statement.

Hunt did not respond to a request for comment on the order. However, a Hunt representative issued a statement after the PUC meeting saying it would "continue to work with all parties in the EFH bankruptcy proceeding over the coming months to reach a successful closure of the transaction consistent with the order approved today." The company is a Dallas-based oil and gas, real estate and power company, owned by the wealthy Hunt family.



Oncor service territories *Source: Oncor*

Oncor delivers power to more than 3 million homes and businesses over about 119,000 miles of transmission and distribution lines in North and West Texas. Determining its fate is central to resolving EFH's Chapter 11 bankruptcy reorganization, which was filed in April 2014.

EFH was the result of a $48 billion leveraged buyout of TXU Corp. in 2007, when the utility faced strong public opposition to its plan to build 11 coal plants in Texas. Private investors led by KKR and TPG Capital bet on rising energy prices but found themselves instead saddled with $42 billion in debt following the 2008 global financial crisis and plunging gas prices due to the fracking boom.

A U.S. bankruptcy judge in December approved EFH's plan to split into two separate companies — Oncor and the unregulated power generation and retail arms, Luminant and TXU Energy, respectively — wiping out the LBO sponsors' equity. The Luminant-TXU Energy businesses would go to senior lenders owed about $24 billion.

The decision assumes creditors would not incur a multibillion-dollar tax bill. The IRS is reviewing whether the transfer of assets to creditors represents a taxable sale.

ISO-NE NEWS

ISO-NE Forecast for 2024 Boosts Solar 30%, Cuts Net Energy Use by 3%

By William Opalka

WESTBOROUGH, Mass. — Load growth remains low in New England while solar power generation is expected to grow even faster than previously predicted, according to a draft study of the region's power trends.

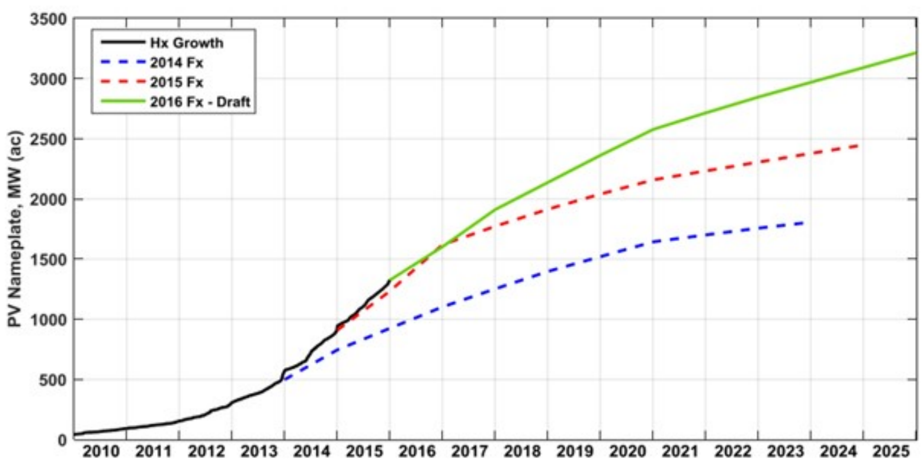
ISO-NE staff presented the draft of its annual Capacity, Energy, Loads and Transmission forecast at the Planning Advisory Committee meeting on Tuesday.

"The draft forecast [for solar] is 30% higher than last year's final forecast," said Jon Black, ISO-NE's manager of load forecasting. He cited increased state support for the resource along with Congress' unexpected extension of the investment tax credit last year.

The 2015 forecast predicted 1,620 MW of solar PV at the end of this year, rising through 2024 to 2,449 MW. In the preliminary 2016 draft, the forecast for the end of this year is essentially flat but rises to 3,092 MW at the end of 2024, an increase of 26%.

The new forecast extends a year further, through 2025, when 3,214 MW of solar is predicted, 31% above the final year in last year's forecast.

Black said the forecast has been refined to include more comprehensive data from distributed asset owners, as well as policy changes. For example, Connecticut's renewable energy credit program is expected to encourage the development of 300 MW of solar and Vermont's renewable portfolio standard has a carve-out for 25 MW of PV, Black said.



Solar PV, reported vs. forecasts *Source: ISO-NE*

This year's forecast, which includes behind-the-meter PV for the first time, also reduces load forecasts and net energy use.

The new study forecasts a 50/50 summer peak of 28,966 MW for 2016, a slight reduction from last year's forecast for the year. It forecasts a 2024 summer peak of 31,493 MW, a 2% reduction from last year's study and a 1.1% compound annual growth rate over 2016.

(The 50/50 estimate represents the mean value in a normal probability distribution, meaning there is a 50% chance the load will be higher than the forecast and an equal chance of being lower.)

Net of passive demand response and behind-the-meter solar, the 50/50 peak for 2024 is forecast at 27,060 MW, down almost 3% from last year's study and a compound annual growth rate of 0.1%.

Energy efficiency, as reported by state utility commissions, is expected to remain stable. Minor increases of its use in some areas were offset by decreases in other parts of the region, according to ISO-NE.

The final CELT report for 2016 will be published on May 1.

ISO-NE Leaves Boundaries Unchanged for FCA 11

By William Opalka

WESTBOROUGH, Mass. — ISO-NE will propose that the zonal boundaries for its 11th Forward Capacity Auction remain unchanged from those set for this year's auction.

Transmission projects expected to be in service by 2020 are adequate to leave the boundaries of the four zones intact for the capacity commitment period of 2020/21, ISO-NE Director of Transmission Services and Strategies Al McBride told the Planning Advisory Committee last Tuesday. The zones are also unaffected by resource retirements and additions already accounted for.

The four zones are: Southeast Massachusetts/Rhode Island, which includes Greater Boston; Northern New England, which includes Maine, New Hampshire and Vermont; Connecticut; and Rest of Pool, generally central and western Massachusetts.

The zones were reconfigured last year due to transmission constraints in SEMA/RI caused by generation retirements. However, ongoing transmission projects are expected to mitigate the effects of those retirements: The Greater Boston upgrades north of the city have been accepted by ISO-NE, and several projects in Rhode Island have been either completed or will be in response to the Brayton Point retirement in southern Massachusetts. (See *ISO-NE Chooses $740M Land-Based Tx Project for Boston Area*.)

In addition, a "significant part" of the Greater Hartford/Central Connecticut upgrades have been certified by ISO-NE and are expected to be in service by June 2019, McBride said.

External transfer limits will not be changed. However, McBride said the Cross Sound Cable that connects ISO-NE with NYISO under Long Island Sound will be re-evaluated with results due by May.

ISO-NE NEWS

New England ROEs Set in Initial Decision

ALJ Overrules Staff Recommendation

By William Opalka

A FERC administrative law judge last Tuesday set the return on equity for transmission projects over two periods in New England lower than what transmission owners sought but higher than what states and commission trial staff advocated.

The 371-page initial decision by Judge Steven Sterner lowered the base and ceiling ROEs for the New England Transmission Owners to 9.59 and 10.42% respectively for December 2012 to March 2014 and set the range at 10.9 to 12.19% for July 2014 through October 2015 (EL13-33, EL14-86).

The decision came in a consolidation of two complaints initiated by state officials against the New England TOs: Eversource Energy, Central Maine Power, National Grid and NextEra.

The case was heard under the new framework FERC set in its June 2014 ruling that switched to a two-step discounted cash flow (DCF) model incorporating short-term and long-term growth rate estimates (EL11-66-001, Opinion 531).

The TOs had sought a base ROE of either 10.24 or 11.14% for the period ending March 2014 and a maximum of 11.14% for the later period. The states had sought 8.75% and 8.16%.

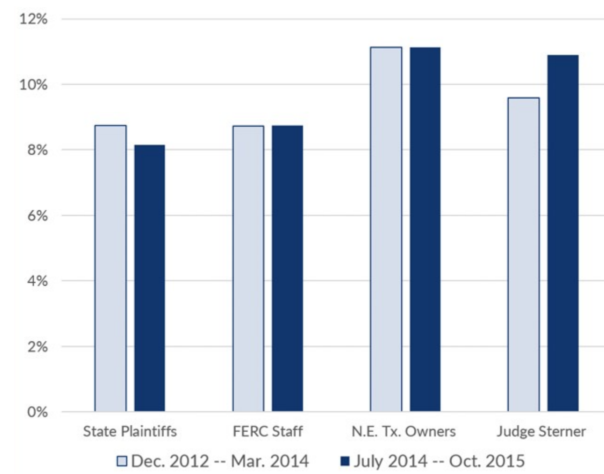
Sterner held an evidentiary hearing last June and July. (See *Hearing over New England Transmission ROE Nears End*.) A decision was expected by the end of the year, but Sterner on Dec. 18 ruled there was "was insufficient evidence in the record from which he could establish a zone of reasonableness" because no parties had performed the DCF methodology in accordance with Opinion 531.

After the calculations were rerun, FERC staff recommended a base ROE of 8.68 or 8.74% for the 2014/15 timeframe.

The states and FERC staff contended the recovery in the stock market made the TOs more attractive to the investment community and that capital markets were returning to more normal conditions.

Sterner rejected their arguments. "The evidence shows that the same types of anomalous capital market conditions that existed [before December 2012]" prevailed in the time periods of the cases, "distorting the inputs to the DCF model," he wrote.

"Alternative benchmark methodologies show that the midpoint of the DCF range of reasonableness would not be a just and reasonable base ROE for the NETOs. Under these circumstances, a mechanical application of the DCF model will not satisfy regulatory standards and an upward adjustment from the midpoint of the zone of reasonableness is necessary in order to comply with" Supreme Court precedent, Sterner wrote.



Recommended base ROEs. Values represent highest recommended ROE where more than one alternative was proposed. *Source: FERC*

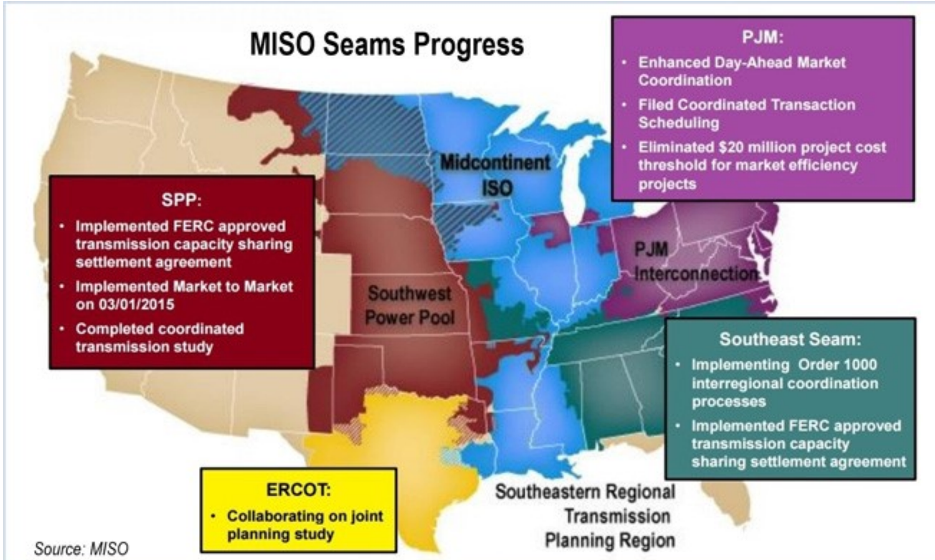
MISO NEWS

MISO, Stakeholders: Reforms Needed, but 'Seamless' Seam an Illusion

By Amanda Durish Cook

MISO stakeholders say they do not expect perfect procedures at the seams with neighboring balancing areas, but they do want the RTO to implement reforms to address price deviations, remove obstacles to interregional transmission projects and improve cost allocation among those projects.

Seams issues were the "hot topic" at last week's Advisory Committee discussion moderated by consultant Robert Gee.



Source: MISO

Remove 'Triple Hurdle'

Several times during last week's discussion, stakeholders called for removal of the "triple hurdle" faced by interregional projects, which must meet a specific interregional cost-benefit standard as well as comply with the internal standards of the two RTOs involved.

Stakeholders also repeated a request that MISO and SPP lower the minimum 345-kV requirement for interregional projects. In comments filed ahead of the meeting, the Power Marketer sector noted that of the 300 interconnections between the two RTOs, only 12 meet that standard.

The Competitive Transmission Developer sector recommended that MISO create a new interregional project category with a separate, singular benefit calculation. "MISO should conduct outreach to neighboring regions to advocate for adoption of the proposed interregional criteria in both [joint operating agreements] and in MISO's regional Tariff as a separate project category," the sector wrote.

It noted that RTO boundaries are "artificially imposed and do not reflect natural barriers to the flow of power throughout the region."

The Environmental Sector urged MISO and PJM to expedite their initiative on targeted market efficiency projects, formerly called "quick hit" projects. The sector also urged MISO to resolve disagreements with other RTOs over the future scenarios that should be studied.

Letting Go

The Independent Power Producers sector predicted a dire future for MISO's market if the RTO failed to improve its market-to-market locational energy pricing and settlements.

The IPPs said MISO's "uncompetitive" capacity construct and abundant wind resources would incentivize energy exports. The sector criticized MISO and its Independent Market Monitor for endorsing concepts rejected by other RTOs, such as the proposed two-season capacity construct. It also criticized MISO's efforts to discourage generators from exporting power under pseudo-tie arrangements with PJM. (See *MISO Delays Seasonal, Locational Capacity Constructs*.)

"MISO staff and the MISO IMM seem to have a hard time letting go of some of their proposals that have been evaluated and subsequently rejected by their seams partners and their seams partners' constituents and stakeholders," the IPPs said.

The Public Consumer sector declined to recommend specific changes but observed that "transmission from region to region … is a major way that [operational] efficiency across seams can be realized."

The Transmission Dependent Utilities sector said RTOs should improve data exchange to better coordinate outages and update firm flow entitlement calculations. "As additional flowgates are determined to be significantly impacted by the dispatch in neighboring regions and interregional transactions, the modeling detail of neighboring systems must expand," the sector wrote.

The TDUs also said RTOs should "seek middle ground rather than holding out for the ideal solution" and consider mediating seams issues when necessary.

Chris Plante, of TDU member Wisconsin Public Service, said the best way to improve the efficiency of the seam is to operate seams dispatch from two RTOs as if they were "under a single commitment and dispatch algorithm."

The Transmission Owners sector wrote in favor of coordinating congestion hedges with other RTOs, improving real-time coordination with SPP and altering generator pseudo-tie requirements to synch with PJM's market.

MISO Board: Cooperation is Key

MISO officials and stakeholders generally agreed that better interregional cooperation is essential to addressing seams issues but opinions varied about what to expect from that cooperation — and what outcomes are actually desirable.

NRG Energy's Tia Elliot pointed out that

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MISO NEWS

More Retirements, First New Committee Meetings as MISO Redesign Nears Completion

By Amanda Durish Cook

NEW ORLEANS — MISO's stakeholder redesign is complete — or nearly so, according to committee members close to the project.

"We have gotten through what I would consider to be a complete transition," Steering Committee Chair Tia Elliott, of NRG Energy, said during last week's board meeting. "Quite a bit of streamlining has taken place."

Audrey Penner, chair of the Advisory Committee, said the redesign was about 90% complete.

Continuing that work, the Steering Committee unanimously supported a motion to retire the Pseudo-Tie Issue Task Team. MISO Director of Market Engineering Kim Sperry said the team had fulfilled its objective of framing pseudo-tie issues and passing them along to other working groups. Sperry said that those issues will be taken up in the Joint and Common Market meetings between PJM and MISO, while related market topics will be addressed at future Market Subcommittee meetings.

Other highlights of the redesign:

- With the retirement of the Data Transparency Working Group, the Steering Committee will take over responsibility for recommending which MISO group should handle data requests. (MISO will retain final say.) Working group liaison Tom Welch said two of the five data issues that remain open will be concluded in the first week of April, when MISO is expected to begin posting final five-minute real-time market clearing prices and historical five-minute real-time *ex ante* LMPs and MCPs.
- Steering Committee members approved the Credit Settlements Working Group charter and management plan. The newly formed group will hold its first quarterly meeting in Carmel, Ind., on May 12.
- The Resource Adequacy Subcommittee has elected Madison Gas and Electric's Gary Mathis and Wisconsin Public Service's Chris Plante to serve as chair and vice chair, respectively. The RASC replaces MISO's former Electric and Natural Gas Coordination Task Force and the Demand Response and Loss of Load Expectation working groups.

MISO, Stakeholders: Reforms Needed, but 'Seamless' Seam an Illusion

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MISO struggles with project cost allocation even among its own stakeholders. "I think it could be difficult when it comes to interregional planning," she said.

Calpine Vice President of Market Design Brett Kruse advocated "reasonable expectations with the guy on the other side of the seam," noting that RTOs will not have identical cost allocations and flowgates. "The other RTOs have already considered [other market operations], determined it's not for them and moved on," he said. "It's best to leave that stuff alone and work on the common areas."

FERC Action Needed?

MISO Chair Judy Walsh asked, "We know the problem ... but are [RTOs] going to be able to work this out, or is it going to take FERC stepping in and ordering this for the common good? Are we kidding ourselves that we will be able to work this out?"

"Your question, I think, is right on target," Plante replied. "Now we're dealing with topics and issues that are heavily ingrained in each RTO's process." He said mutual respect for different market implementations will be instrumental in "bridging the gap."

Director Phyllis Currie said RTOs must seek compromise. "What I'm hearing here is not that different from what I've heard in California ... and I've seen it over the years across different industries," she said. "If everybody keeps coming at the problem the same way they've come at the problem time and time again, you don't get anywhere."

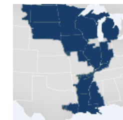
Megan Wisersky of Madison Gas and Electric said RTOs should not be required to have uniform rules. "I say, vive la différence!"

"My takeaway is we may not ever get to the idea of a seamless seam, but that shouldn't dissuade us," said board member Thomas Rainwater.

Plante agreed. "A seamless seam is an oxymoron," he said.

MISO Advisory Committee © *RTO Insider*

MISO NEWS



Markets Committee of the Board of Directors Briefs

MISO Board of Directors © *RTO Insider*

MISO Greets Spring with Positive Winter Report

NEW ORLEANS — MISO energy prices declined this winter along with loads and natural gas costs in the face of above-normal temperatures, RTO staff said during a March 22 Board of Directors meeting.

Real-time prices in the MISO footprint averaged $21.80/MWh, down 13% from the prior quarter and 29% from the same period a year ago. Average system-wide load fell 2.7% compared with last winter, with seasonal load peaking at 98.2 GW on Jan. 19, well below January 2014's all-time winter peak of 109.3 GW.

"Part of the ease in making our way through the winter was the relatively mild temperature conditions," said Jeff Bladen, MISO's executive director of market design.

Bladen said the higher temperatures and historically low gas prices also reduced revenue sufficiency guarantee payments to "some of the lowest market uplift charges since 2012." Uplift charges averaged $0.09/MWh, down from $0.23/MWh last winter and $0.46/MWh in 2014.

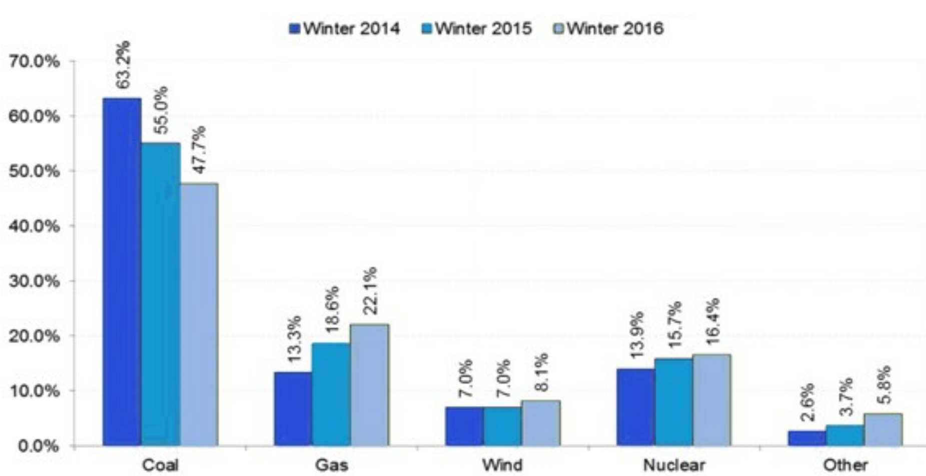
Natural gas costs should stay low in the near term, said Michael Wander, of MISO Independent Market Monitor Potomac Economics. Prices at both the Chicago City Gate and Henry Hub ended February under $2/MMBtu.

Other winter highlights:

- MISO set an all-time wind output record of 13.1 GW on Feb. 19, surpassing the previous peak of 12.7 GW set a month earlier. For an hour, more than one-fifth of MISO's power came from wind resources.
- Coal generated 47.7% of electric production, down 25% since 2014.

  Most retired coal generation has been replaced by gas.

MISO board member Michael Curran said he wanted a review of MISO's metrics, as so many "boil down to a dollar amount." He worried that low gas prices could be "masking" uneconomic activity.



Dispatched generation by fuel type *Source: MISO*

MISO Prepped for Summer Demand

MISO officials are concerned about tightening reserve margins despite a preliminary assessment showing that the RTO is comfortably positioned to meet demand this summer.

MISO is projecting an 18.2% reserve margin this summer, exceeding the 15.2% requirement and a slight increase from last year's 18% margin.

Available supply, however, dropped to 149 GW from 150.3 GW.

MISO CEO John Bear said declining demand contributed to this year's slightly higher reserve margin. He added that retirements driven by EPA's Mercury and Air Toxics Standards were on par with the RTO's predictions.

A final summer analysis will be presented at MISO's Summer Readiness Workshop in May.

— Amanda Durish Cook

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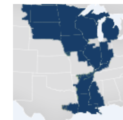
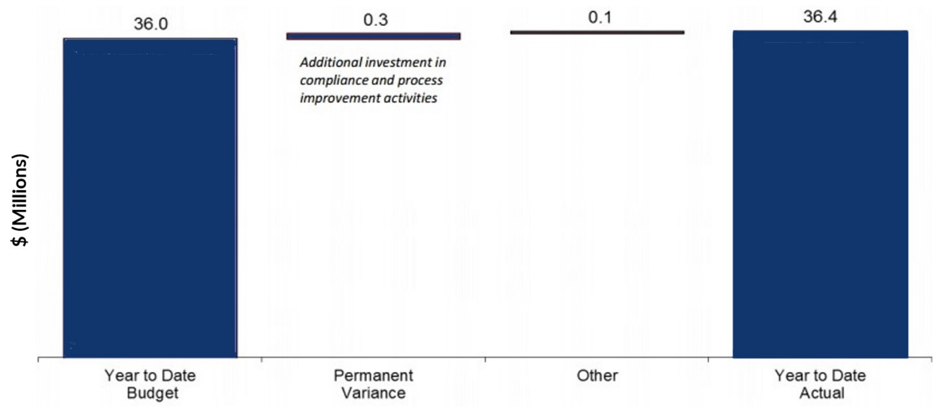
MISO NEWS



Board of Directors Briefs



MISO year-to-date budget *Source: MISO*

Board, Chairman Bay Talk CPP Modeling, Renewable Dispersion

Bay

NEW ORLEANS — MISO will commence its long-term Clean Power Plan analysis in July regardless of the existing Supreme Court stay, Clair Moeller, executive vice president of transmission and technology, told the Board of Directors last week. Moeller said the RTO would provide individual state data to officials in all states, including those having placed a "hard stop" on CPP preparations.

FERC Chairman Norman Bay, who attended the board meeting, said he hoped MISO states challenging the CPP and halting compliance work had a "Plan B." He also thanked the RTO for its "uniquely constructive and pragmatic voice" in supporting the measure.

"We know we're on a glide path already with low-cost wind turbines, lower-cost solar panels and greater efficiency," board member Tom Rainwater said. He asked how the economics of renewable penetration would play out even if the CPP is struck down.

Moeller called that one of the more complicated questions MISO would seek to answer through remaining modeling, saying the RTO's "job is to plan into an uncertain future."

Bay said that if analysts are correct in predicting a 50% decline in the cost of storage by 2020, storage technology could be a "game changer" for renewable penetration.

"Everyone knows the cost of energy storage will decline," Bay said. "It's a question of how much and when. … This is an area where I expect FERC to do more work and work to remove barriers to entry."

MISO YTD Financials 1% Over Budget

MISO's year-to-date February financials came in $400,000 — or 1.1% — over the RTO's $36 million budget for the period.

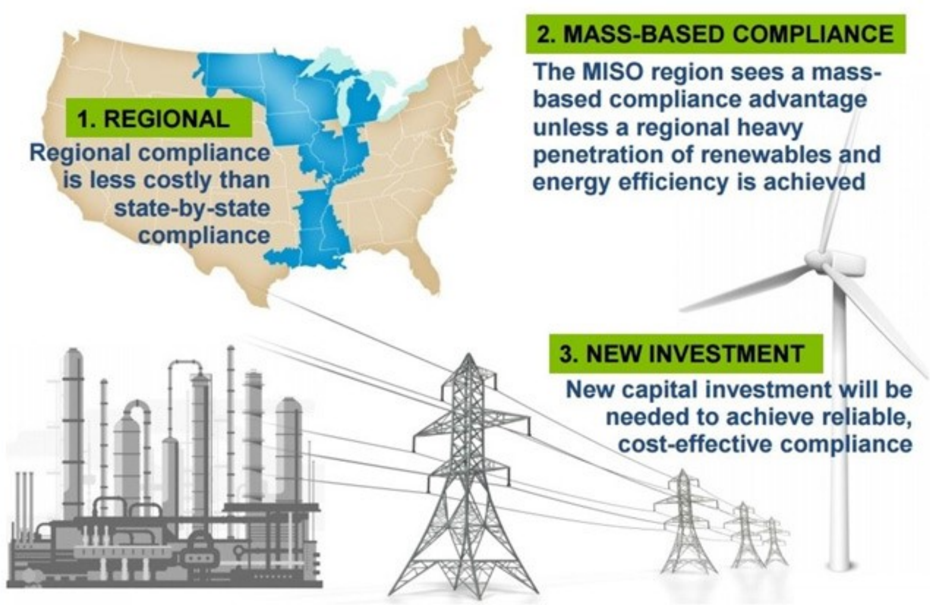
Most of the overage — $300,000 in additional costs for "compliance and process -improvement activities" is a permanent variance, said Vice President of Finance Jo Biggers, who said MISO was seeking to trim other spending to make up for the shortfall.

"We're still forecasting to be on budget by the end of the year," Biggers said.

Board member Paul Bonavia noted that the board had "only just finalized the budget, and we already have a permanent variance."

"We're going to figure out a way to cover it by reducing costs somewhere else," MISO CEO John Bear told the board.

The overrun occurred despite MISO spending only $6 million of its forecasted $7.1 million capital budget, mostly because of project delays. Biggers said capital spending is expected to fall in line by the end of March when projects catch up to their timelines.



MISO's key Clean Power Plan observations *Source: MISO*

MISO Adds Transmission Developers, Industrial Customer Group to Membership

MISO's board unanimously approved membership applications for three non-transmission owning entities, including:

- Cobra Industrial Services, a Houston-based transmission developer;
- Transmission developer PPL TransLink, a unit of Pennsylvania-based PPL; and
- Louisiana Energy Users Group, an association of 23 industrial customers.

— Amanda Durish Cook

MISO NEWS

IPL, MidAmerican: MISO Misallocating Upgrade Costs in GIA

By Michael Brooks

Two Midwest load-serving entities are challenging a generator interconnection agreement filed by MISO that they say would result in one company paying too much for $5.7 million in transmission upgrades because the RTO is misapplying a provision in its Tariff.

Interstate Power and Light (IPL), which is building the 650-MW Marshalltown Generating Station in Iowa, joined MidAmerican Energy last week in protesting the GIA that MISO filed for the combined cycle plant. The companies told FERC that MidAmerican would end up paying the majority of costs for the transmission upgrades in the agreement, while IPL would only pay the installed cost of capital of the shared network upgrades and not its full portion of the monthly facilities charges contained in MidAmerican's facility service agreements with transmission owner ITC Midwest (EL16-1083).

The upgrades in the Marshalltown agreement were previously included in GIAs filed for two MidAmerican wind farms. ITC had elected to fund the upgrades itself and agreed with MidAmerican that if they became shared upgrades, ITC would determine each interconnection customer's cost responsibility for them.

Instead, the companies said, MISO believes that Attachment FF of its Tariff requires IPL to make a one-time cost of capital payment to MidAmerican. The companies argued that Attachment FF only applies to when an interconnection customer, not the TO, is funding the upgrades.

"The MISO Tariff language is silent regarding the instant situation, where ITC Midwest as the transmission owner elected to self-fund the network upgrades," IPL and MidAmerican said. "MISO has refused to recognize the difference between a situation where the first interconnection customer funded the shared network upgrades and the situation here where the transmission owner self-funded" them.

"The distinction is important because … MISO's requirement that the second interconnection customer simply make a one-time payment for the cost of the shared network upgrades to the first interconnection customer results in unequal and inequitable treatment of the two interconnection customers for the same upgrades," the companies said.

The companies said IPL should pay 32% of the costs for a $2 million transformer upgrade and 51.4% for a $3.72 million line rebuild. They asked FERC to order MISO to revise the Marshalltown GIA to reflect these cost allocations.

"Parties should be paying their fair share," Cortlandt C. Choate Jr., senior attorney for IPL parent company Alliant Energy, said in an interview.

They also asked that MISO be required to revise its Tariff to clarify interconnection customers' cost responsibilities for upgrades funded by the TO.

MISO Proposes Adding Forward Auction for Retail Choice Zones

Continued from page 1

The proposed Forward Local Requirements (FLR) auction would be held three years in advance of the planning year and employ a downward sloping demand curve. Procured local capacity would be self-scheduled into the existing PRA with costs allocated *pro rata* to participating load-serving entities.

LSEs not subject to retail choice will continue to procure capacity through state integrated resource plans and the PRA using the current vertical demand curve.

"These enhancements are designed to have no impact on the existing state or local jurisdictional long-term planning processes for those that do not participate," MISO said. "The effect will be that nonparticipating LSEs and participating LSEs will have different price sensitivities to purchasing … capacity in the auction."

Design Elements

The RTO proposed to hold the first FLRAs in spring 2018 for planning years 2019/20 through 2021/22. The amount of capacity retail choice LSEs obtain under the sloped demand curve would be variable, within a newly defined "target reliability range." Any capacity needs not met through the forward auctions will be filled through the existing prompt-year capacity auction.

While LSEs in deregulated areas would be automatically entered into the FLRA, they could opt out by developing a fixed resource adequacy plan in advance of the auction. LSEs outside of deregulated areas could opt-in to the forward auction but would be required to remain for at least five years.

Participation will be voluntary for supply resources except for those in a local resource zone with participating demand. Such resources will be subject to existing market power rules.

Supply resources owned or controlled by LSEs will be exempt from the must-offer requirements if the LSEs have forecasted demand equal to or more than their supply portfolios.

Seasonal Construct

The forward capacity product would match the two-season construct MISO proposed in December for the PRA, with a four-month summer season (June-September) and eight-month winter (October-May). The RTO hopes to implement the seasonal structure for the 2018/19 planning year. (See *MISO Delays Seasonal, Locational Capacity Constructs*.)

MISO officials said the RTO is committed to working with stakeholders to refine the new auction proposal. "I think the key is keeping that stakeholder dialogue going, and we'll continue that in the April Resource Adequacy Subcommittee," MISO CEO John Bear said.

In a recent letter to stakeholders, MISO Executive Director of Market Design Jeff Bladen wrote, "The goal is to ensure MISO's capacity market design is up to the task of serving as the primary market mechanism for assuring resource adequacy in all time horizons in competitive retail areas of the MISO region while also serving a complementary role in the rest of MISO."

MISO plans to file a final proposal with FERC in July, according to Bear.

NYISO NEWS

Retailers Ask for Rehearing of NY Guaranteed Savings Order

By William Opalka

Electricity retailers in New York on Friday asked for rehearing of an order that would overhaul retail customer choice in the state.

The Impacted ESCO Coalition and the National Energy Marketers Association separately asked for a rehearing of the New York Public Service Commission's Feb. 23 order that mandated customer savings under most contracts (98-M-1343).

The order mandates that customers be guaranteed an electric rate lower than what their host utility offers, with the exception of "green" offerings that must include a minimum of 30% renewable energy. The commission said the order was intended to combat deceptive practices and boost consumer confidence. (See *Zibelman: Rules Meant to Enable Markets*.)

The retailers say the reforms were ill-considered and hastily enacted. "Contrary to well established commission policy and practice in support of the development of competitive retail markets, and without notice or meaningful opportunity to be heard, the February order adopted requirements for ESCO [energy service company] service to mass market customers, which would effectively shut down the market for the majority of ESCOs and their customers," the NEMA wrote.

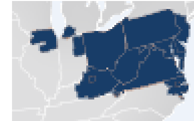
The PSC had required ESCOs begin compliance within 10 days, or March 3. However, a state court stayed the order, scheduling a show-cause hearing for April 14. (See *Court Delays New York 'Guaranteed Savings' Rules*.)

Among the complaints by the ESCOs is that the rules were enacted without adequate notice under the State Administrative Procedures Act and that the price guarantee is improper rate-setting by the PSC.

The NEMA also said the order amounts to an illegal taking of its members' accounts. "All of the ESCOs that cannot comply with the order will be forced to give their hard-won customers, which the ESCOs incurred significant costs to acquire, to the competing monopoly utility. The utilities will unfairly acquire these ESCO customers for free," it wrote.

"The improperly noticed rules represent a sweeping set of changes that threaten to destroy hundreds of businesses and affect millions of New York residents," wrote attorneys for the IEC, which describes itself as representing "small to medium" ESCOs, many of whom who operate primarily in New York.

PJM NEWS



PJM MRC/MC Preview

Below is a summary of the issues scheduled to be brought to a vote at the Markets and Reliability and Members committees Thursday. Each item is listed by agenda number, description and projected time of discussion, followed by a summary of the issue and links to prior coverage in ***RTO Insider***.

RTO Insider will be in Wilmington, Del., covering the discussions and votes. See next Tuesday's newsletter for a full report.

Markets and Reliability Committee

2. PJM Manuals (9:10-9:30)

Members will be asked to endorse the following manual changes:

- Manual 1: Control Center and Data Exchange Requirements. Adds new section for planning, coordination and notification of system changes and events, with updated procedures. New Attachment C is the new Inter-control Center Communication Protocol (ICCP) failover test plans diagram. Removes references to the PJM ICCP network interface control document and PJM ICCP communications workbook.
- Manual 6: Financial Transmission Rights. Housekeeping changes resulting from annual review. Clarifications better describe existing rules and processes.
- Manual 11: Energy and Ancillary Services. Changes implement Capacity Performance rules regarding unit-specific parameters. For base capacity resources, the status quo remains until 2018. For CP resources, beginning in delivery year 2016, unit-specific parameters will apply during hot weather alerts, cold weather alerts, emergency actions and when being offer-capped to maintain system reliability.
- Manual 11: Energy and Ancillary Services Market Operations. Revisions reflect day-ahead market timeline changes. Among them: effective Friday, the deadline for submitting day-ahead bids will be 10:30 a.m. The day-ahead clearing window will be reduced to three hours. The deadline for posting day-ahead results will be 1:30 p.m. or as soon as practicable. Results will be posted upon approval but not before noon.

3. Confidential Market Data Postings (9:30-9:45)

Manual 33: Administrative Services for PJM Interconnection Agreement. Changes provide six exceptions for when PJM may release market data. (See "Market Data Confidentiality Rule Change Gets First Reading," *PJM Market Implementation Committee Briefs*.)

4. Operating Parameter Definitions (9:45-10:15)

Manual 11: Energy and Ancillary Services Market Operations; Manual 15: Cost Development Guidelines; and Manual 28: Operating Agreement Accounting. Revisions define operating parameters. (See "Operating Parameter Definitions Approved," *PJM Market Implementation Committee Briefs*.)

5. Performance Assessment Hour Ramp Rate (10:15-10:45)

Revisions to Tariff and Manual 18: PJM Capacity Market offer an interim solution to the performance assessment hour ramp rate. (See "Ramp Rate for CP Approved," *PJM Operating Committee Briefs*.)

6. Regional Transmission and Energy Scheduling Practices (10:45-10:55)

Proposed revisions to regional transmission and energy scheduling practices reflect PJM's adjustment to its day-ahead energy market timeline. (See "Day-ahead Submission Deadline Moved up," *PJM Market Implementation Committee Briefs*.)

7. Governing Documents Enhancement & Clarification Subcommittee (GDECS) (10:45-11:05)

A. Members will be asked to approve updated definitions and clarifications to PJM's governing documents. They involve the terms PJM board, market participant, credit breach, PJM region, regional entity, affiliate, PJM markets, economic minimum and transmission customer.

Members Committee

CONSENT AGENDA (1:20-1:25)

B. Members will be asked to approve revisions to governing documents related to updated definitions developed by the GDECS.

ENDORSEMENTS (1:25-1:55)

1. Governing Documents Enhancement & Clarification Subcommittee (GDECS) (1:25-1:35)

A. Members will consider proposed changes to governing documents as well as additional clarifications to previously endorsed revisions.

B. Members will be asked to endorse Tariff and Operating Agreement revisions regarding the definition of the term counterparty. In an Aug. 27 Members Committee vote, the word counterparty was removed from a batch of proposed definitions and returned to the GDECS for further review at members' request. The definition was aligned to use more precise language in the OA that specifies when PJMSettlement will and will not be a counterparty to a transaction or agreement.

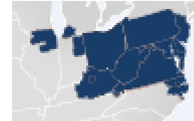
2. Capacity Performance Implementation (1:35-1:45)

See MRC item 5 above.

3. Operating Parameter Definitions (1:45-1:55)

See MRC item 4 above.

PJM NEWS



Generators to FERC: Expand MOPR for Subsidized FE, AEP Plants

By Suzanne Herel

Eleven generating companies, including Calpine, Dynegy and NRG, have asked FERC to expand PJM's minimum offer price rule in time for May's 2019/20 Base Residual Auction, as the Public Utilities Commission of Ohio is poised to rule on power purchase agreements for FirstEnergy and American Electric Power.

"Complainants respectfully request that the commission expand the MOPR to prevent the artificial suppression of prices in the Reliability Pricing Model (RPM) market by below-cost offers for existing resources whose continued operation is being subsidized by state-approved out-of-market payments," the companies said (EL16-49).

The companies also voiced support for related complaints asking FERC to void the waivers it granted AEP and FirstEnergy regarding affiliate power sales to ensure commission review of the proposed eight-year agreements, which are supported by PUCO staff. The Ohio commission is expected to rule on the requests in the coming weeks. (See *PJM Joins EPSA's Call for FERC Review of Ohio PPAs*.)

Similarly, the complainants have asked that FERC address the waiver issue in time for the May BRA.

Currently, the MOPR applies only to certain new resources.

Recently, the generators argue, "a new threat has emerged in the form of subsidies to existing resources that create incentives for noncompetitive offers and that may prevent the exit of uneconomic resources."

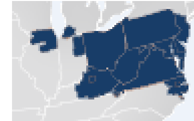
The proposals from AEP and FE would have "just that effect with respect to over 6 GW of capacity in PJM," they said.

The companies said they recognized that PJM stakeholders have not had a chance to discuss changes to the MOPR and that Tariff revisions addressing the upcoming BRA might not be an appropriate permanent remedy. Therefore, they are requesting narrowly tailored revisions and a directive to PJM to develop a long-term solution by Nov. 1.

Regardless of whether the PPAs are approved, PJM should initiate a stakeholder process to expand the MOPR, the generators said.

The companies invoked testimony to PUCO by Independent Market Monitor Joe Bowring saying the PPA proposals "highlight the fact that the MOPR needs to be expanded to address all cases where subsidies create an incentive to offer capacity into the PJM capacity market at less than an unsubsidized, competitive offer. This would include offers from all new and existing units that receive subsidies."

Other parties to the filing are Eastern Generation, Homer City Generation, Carroll County Energy, C.P. Crane, the Essential Power PJM Companies, GDF SUEZ Energy Marketing, Oregon Clean Energy and Panda Power Generation Infrastructure Fund.



Md. PSC Member Scrutinized over Contacts with Governor

By Rich Heidorn Jr.

A newly appointed member of the Maryland Public Service Commission insisted Monday there was nothing improper about his emails with Gov. Larry Hogan's administration, communications that critics say raise questions about his independence.

Hogan named Michael T. Richard, his former deputy chief of staff, to the PSC in a recess appointment in late January. Richard, a former director of the Maryland Energy Administration (MEA), is seeking Senate confirmation to a full term.

Richard

Shortly after his appointment, according to emails obtained through a public records request, Richard shared non-public information with Hogan's administration regarding an offshore wind application and discussed strategy with the governor's office on energy efficiency and community solar programs.

The emails were obtained by Public Citizen and the Energy and Policy Institute, which said the records showed Richard had engaged in improper *ex parte* communications and should not be confirmed.

At a hearing of the Senate Executive Nominations Committee on Monday night, Chairman Jamie Raskin expressed concern that Richard was "coordinating strategy" with Hogan's administration.

Richard said his communications were merely an effort to brief members of the governor's office on energy issues they were taking over from the "portfolio" he held before his PSC appointment. Richard did offer a *mea culpa*. "I am sorry that I created a doubt about my independence," he said.

After an hour of questioning, Raskin adjourned without calling for a vote on the nominee, saying he would schedule another meeting next week.

Offshore Wind Application

On Jan. 29, Richard sent Hogan's director of policy, Adam Dubitsky, an email regarding an application for offshore wind renewable energy credits (OREC). "This is NOT yet public information, but I wanted you to be aware," he wrote.

Dubitsky responded by asking whether the filing preempts "our taking action to protect ratepayers from a potentially $1.7B rate increase as indicated in OREC's fiscal note?"

Richard had been informed of the application in an email from an advisor to PSC Chair Kevin Hughes. The email noted that the application is supposed to be confidential during a 30-day internal administrative review and a 180-day period in which other developers can apply for the credits.

"It was designed this way because the application window is supposed to be equivalent to a closed bid process," the advisor wrote.

At the hearing Monday, however, Richard said the information was not confidential and that PSC General Counsel Robert Irwin had approved his communication. "It was discoverable. It was available," he said.

EmPower Maryland

A second communication that concerned some committee members came on Feb. 11, when Richard sent Mary Beth Tung, deputy secretary of the state Department of the Environment, an email discussing the administration's position in upcoming hearings on the EmPower Maryland energy efficiency program.

The governor's office is a party to the EmPower hearings through the MEA. The agency intervened in PSC dockets involving the program, noting that the state's utilities are required to consult with the agency regarding the "design and adequacy" of their plans to achieve the electricity savings and demand reduction targets set by the 2008 legislation creating the program. The act requires that the PSC consider MEA's comments on the utilities plans.

Richard wrote Tung regarding hearings scheduled for May to review the utilities' performance in the second half of 2015.

"This will begin our first potential opportunity to begin putting our imprint on this significant energy tax policy," Richard wrote. "This will be a significant and very public PSC action, so early governor's office direction, planning and executive [branch] coordination on related policies will be important."

Richard also offered Tung "policy advice" on the state community solar program, suggesting a shift from "grant-based" to "financing-based" energy efficiency and renewable energy incentive programs.

Business as Usual?

Like Hogan, Richard is a Republican. The Senate is controlled by Democrats.

Republicans on the committee said Richard's communications were similar to those Hughes and then-Commissioner Kelly Speakes-Backman had in 2012 with the administration of former Gov. Martin O'Malley, a Democrat. Hughes was O'Malley's deputy legislative officer before joining the commission.

"We're beating a dead horse," said Republican Sen. George Edwards.

But Democratic Sen. James Brochin told Richard the communications created "a reasonable question of who's team you're on."

"I can assure you that I understand very well what it means to be a Public Service Commissioner and that it demands independence," Richard responded.

"This is NOT yet public information, but I wanted you to be aware."

PSC Commissioner Michael T. Richard, in email to Hogan administration

SPP NEWS

Briefs

Christiano Elected Chairman of SPP RE Trustees

The SPP Regional Entity trustees elected Dave Christiano as their new chairman during a special board meeting last week, replacing the resigned John Meyer.

Christiano

Meyer announced his resignation the week before, during the SPP RE's spring workshop in Little Rock, Ark. Because there are only three RE trustees, Christiano and Gerry Burrows moved quickly to "expedite" Meyer's replacement, they said in an email to members.

During the March 22 call, Burrows nominated Christiano for chairman, then joined him in a 2-0 vote.

Christiano told members the RE doesn't expect to fill Meyer's vacancy until July at the earliest. The Russell Reynolds Associates executive search firm has been contracted to help.

"Gerry and I decided we couldn't go four months without a chairman," Christiano said.

Alluding to Meyer's nine years as chair of the RE trustees, Christiano told members they will see little change.

"I will pledge, and I'm sure Gerry will pledge too, that we're not going to change any directions," said Christiano, who has been a trustee alongside Meyer since the RE's inception in 2007.

The RE trustees operate separately from SPP's Board of Directors, providing oversight of RE decisions on regional standards, compliance enforcement and penalties. Only the trustees and certain RE staff members have the authority to make compliance and enforcement decisions.

An electrical engineering graduate from Clarkson College in New York, Christiano began his industry career with Consolidated Edison in New York City in 1971 and took part in an analysis of the 1977 blackout. He spent 28 years with City Utilities of Springfield in Missouri before becoming an RE trustee. Christiano has served on numerous SPP and NERC boards and committees.

Meyer resigned from the RE because of a conflict with the bylaws of Western Interconnection reliability coordinator Peak Reliability, where he is vice chair. The Western Area Power Administration, which joined SPP last year, is partly in the Western Interconnection, requiring SPP to register with the Western Electricity Coordinating Council as a planning authority and transmission-service provider.

To ensure independence, Peak's bylaws prohibit its board members from serving on other boards in the WECC.

Christiano said Meyer chose to stay with Peak, where he only has two years of service. "He felt he had a lot more to offer there," Christiano told *RTO Insider*.

SPP Sets New Wind Peak Record

The RTO set a new wind peak at 6 a.m. March 21, relying on about 87% of the wind capacity in its footprint to generate 10,783 MW. The previous record of 10,280 MW was set Feb. 17.

The RTO has 12,397 MW of installed and available wind capacity in its footprint, with another 33,819 MW of capacity in various stages of development.

Brown Honored with International Award

SPP CEO Nick Brown will be honored by the University of Arkansas at Little Rock's (UALR) College of Business for his recent Business Achievement Award from the Beta Gamma Sigma.

The society annually recognizes achievement in business and ethical leadership. The UALR College of Business nominated Brown for the award and will hold an invitation-only reception in his honor in Little Rock. Brown said he was "humbled" by the award and thanked SPPs employees, "who are the foundation of our corporate success."

Beta Gamma Sigma is an international honor society serving business programs accredited by the Association to Advance Collegiate Schools of Business.

— Tom Kleckner

DOE Agrees to Join Clean Line's Plains & Eastern Project

Continued from page 1

Valley Authority near Memphis after first dropping off 500 MW at a converter station in central Arkansas.

DOE: Need for Transmission

The Energy Department said development of the panhandle's "consistent and lowest-cost [wind resources] in the nation" has been constrained by a lack of "cost-effective transmission capacity to major load centers."

"The project would, therefore, unlock the potential for significant new development of wind energy and deliver that energy to a region of the United States that has seen relatively scarce wind development," the department said. "By increasing the availability of renewable energy from the Panhandle region across a wide geographic area, the project will facilitate market competition that will ultimately benefit consumers and the renewable energy industry as a whole."

Clean Line President Michael Skelly welcomed DOE's participation. "The Department of Energy's decision shows that great things are happening in America today," he said, calling Plains & Eastern the "largest clean-energy infrastructure project in the nation."

DOE RFP

Clean Line proposed the project in response

Continued on page 17

SPP NEWS

DOE Agrees to Join Clean Line's Plains & Eastern Project

Continued from page 16

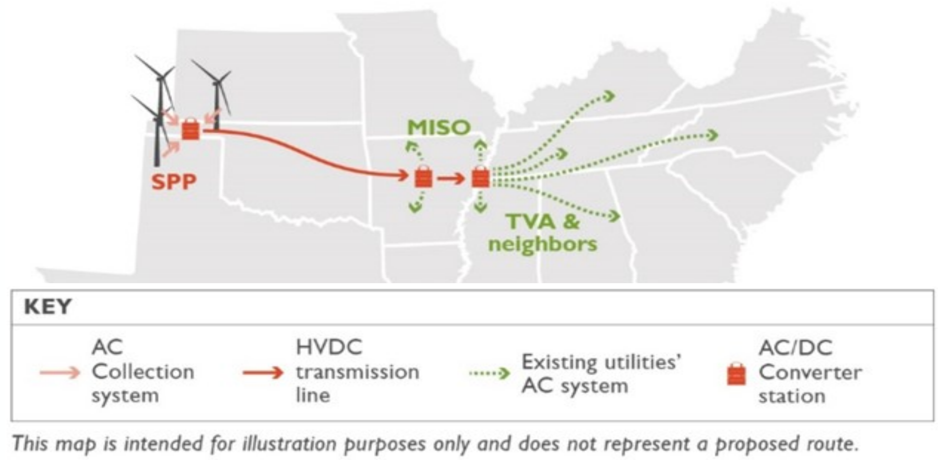
to the Energy Department's 2010 request for proposals for transmission projects under Section 1222 of the Energy Policy Act of 2005, which authorizes the department to participate in "designing, developing, constructing, operating, maintaining or owning" new transmission.

With major regulatory approvals in hand, Clean Line says construction can begin in 2017.

The department's involvement could help Clean Line in acquiring the right of way for the line, although it said the company will need to demonstrate the commercial viability of the project by executing "significant" firm transmission service agreements before obtaining land through eminent domain. It will also need to complete technical studies required by SPP, MISO and TVA.

Clean Line says the project "will support thousands of jobs in Oklahoma, Arkansas and Tennessee, including hundreds of manufacturing jobs." Clean Line has a $300 million contract with Pelco Structural, of Oklahoma, to build the project's tubular steel transmission towers and has selected three Arkansas companies to build related infrastructure such as transmission conductors and glass insulators.

The American Wind Energy Association said the project will "create the opportunity" for $7 billion in new wind farm development. "The project supports economic opportunity, often in rural areas that need it most, and potential energy bill savings for Americans," said AWEA CEO Tom Kiernan.



Plains & Eastern Clean Line project *Source: Clean Line Energy Partners*

"Over 99% of all installed utility-scale wind capacity is located in rural areas."

Opposition to Project

As a condition for its approval, the department required Clean Line use environmental-protection measures during the development, construction and operation of the project "to minimize impacts to landowners and the environment."

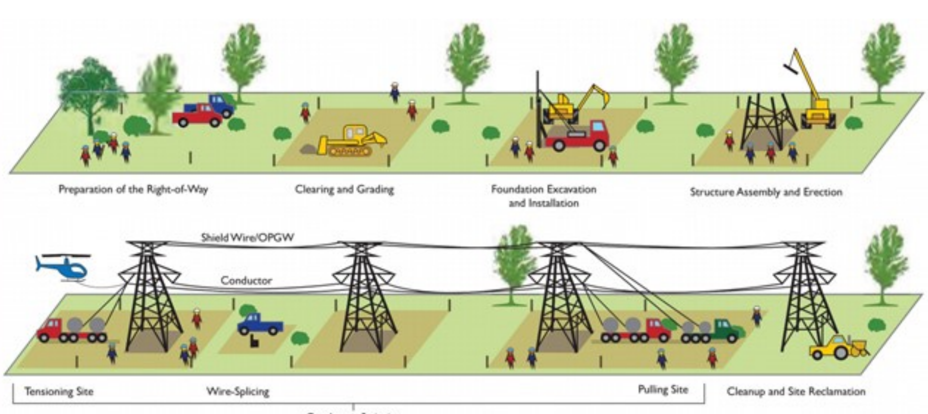
Still, the project has drawn opposition from landowners and political figures. (See DOE Issues Favorable EIS on Plains & Eastern Project and Plains & Eastern Tx Line Foes Cry Foul over DOE Review.)

The Arkansas congressional delegation issued a statement lamenting the Energy Department's involvement. "Today marks a new page in an era of unprecedented executive overreach, as the Department of Energy seeks to usurp the will of Arkansans and form a partnership with a private company — the same private company previously denied rights to operate in our state by the Arkansas Public Service Commission," the legislators said. "Despite years of pushback on the local level and continuous communications between our delegation and Secretary [Ernest] Moniz, DOE has decided to forgo the will of the Natural State and take over the historic ability of state-level transmission control through this announcement."

Although Clean Line won public utility status in Oklahoma and Tennessee, its request was rejected by Arkansas. "They couldn't find a way to regulate [an] interstate transmission provider," Clean Line General Counsel Cary Kottler said in an interview. The department's imprimatur allows the company to overcome that hurdle, he said.

The department will participate in the project through the Southwestern Power Administration, a federal agency that markets hydroelectric power from 24 dams in six states.

It will not make any financial contribution. Instead, Clean Line will pay any Energy Department costs in advance, as spelled out in a participation agreement that also obligates the developer to contribute 2% of its revenues to federal hydropower-infrastructure improvements.

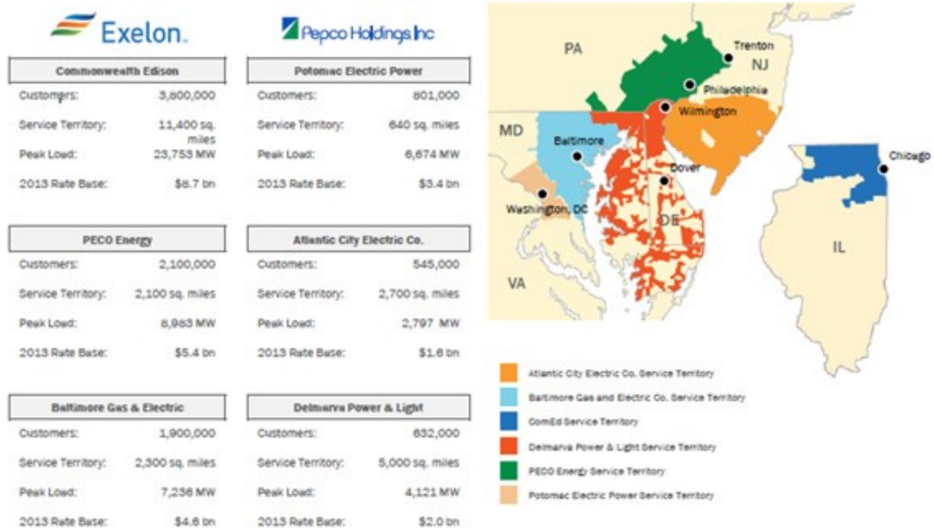


HVDC transmission line construction sequence *Source: Department of Energy*

Exelon Closes Pepco Merger Following OK from DC

Creates Largest US Utility

By Suzanne Herel



Combined Exelon-Pepco Holdings Inc. service territory *Source: Exelon*

Exelon closed its $6.8 billion acquisition of Pepco Holdings Inc. on Wednesday, after the D.C. Public Service Commission approved the merger 2-1 on terms it crafted itself.

Two years in the making, the deal will rank Exelon as the largest utility in the country by number of gas and electricity customers.

Pepco shares gained $5.71 (27%) to $26.95 on the news, while Exelon shares lost 28 cents (-0.8%). Pepco stockholders will receive $27.25/share in the deal. PHI's common stock was removed from the New York Stock Exchange on Thursday.

Pepco's three operating companies will retain their local headquarters: Atlantic City Electric in Mays Landing, N.J.; Delmarva Power in Newark, Del.; and Potomac Electric Power Co. in D.C.

D.C. also won additional concessions: Exelon will move the offices of the CFO and the chief strategy officer to the district along with that of Pepco Energy Services, which is now in Arlington, Va. David Velazquez will assume the role of president and CEO of PHI, a post previously held by Joseph Rigby, who is retiring.

"Today, we join together as one company to play a vital role as a leader in our industry and the mid-Atlantic region," Exelon CEO Chris Crane said in a statement. "We've made a number of commitments to customers in all of the Pepco Holdings utilities' jurisdictions — the district, Maryland, Delaware and New Jersey — and we look forward to getting to work to deliver those benefits to our customers and communities."

An Exelon spokesman said the D.C. agreement triggers the "most favored nation" clauses in the other states' contracts, and it will be returning to those state regulators to "true up" benefits.

So far, Exelon has committed $430 million for ratepayer credits, reliability improvements and other investments for customers in Pepco's service territories.

DC PSC Lifeline

Many had expected the deal to fail, after the most recent proposal by Exelon and Pepco was rejected by all but three of the other settling parties.

The companies on March 7 asked the commission to consider three options: Revisit its rejection of the settlement agreement brokered by the administration of Mayor Muriel Bowser; adopt the revised proposal by Commissioner Joanne Doddy Fort; or accept a third alternative that would give the PSC more latitude in how to spend money from the $72.8 million customer investment fund on rate relief. (See *Exelon-Pepco Deal Doubtful as DC Officials Reject Alternatives*.)

Fort and Commissioner Willie Phillips voted to approve the second option; Chairwoman Betty Ann Kane dissented.

Fort's proposal took Bowser's deal and added changes regarding the use of the CIF, the development of a 5-MW solar generation facility at the Blue Plains Advanced Wastewater Treatment Plant and the role of Pepco in establishing public-purpose microgrids.

The Bowser-brokered deal had earmarked money from the CIF for a handful of D.C. groups, including the Sustainable Energy Trust Fund, the District of Columbia Consumer and Regulatory Affairs Green Building Fund and the Low Income Home Energy Assistance Program.

The PSC's counteroffer takes those funds, totaling $32.8 million, and places them in an escrow account to pay for projects to modernize the district's energy system and for energy efficiency and energy conservation initiatives focused on housing for low- and limited-income residents. The PSC would have authority over the funds' disbursement.

In her dissenting opinion, Kane said that developments in the record since she voted to oppose the Bowser settlement in February "give me even stronger reasons to find that the takeover of the district's electric distribution company by a multi-faceted, vertically integrated, generation-focused holding company … benefits Pepco and Exelon shareholders but does not provide sustainable benefits to district ratepayers, places Pepco within a structure that is contrary to district law and policy and should be rejected."

Unlike a rate case, she said, the sale of Pepco can't be reviewed again. "It is gone forever," she said. "The stated motive of the sellers is to increase PHI shareholder value. The motive of the buyer is to add regulated revenue to prop up Exelon's failure to pay dividends to its shareholders. However, the needs of Pepco's customers and the district are for a safe, reliable, modern electricity delivery distribution system at a just and reasonable cost."

In their order, Fort and Phillips said Exelon's first option identified no error of law or fact that would warrant a reconsideration of its rejection of the settlement negotiated by Bowser's office.

It found the third alternative unacceptable for three reasons: It would allocate a $25.6 million base rate credit solely to residential and apartment customers; there was not enough information to determine the implications of the proposed base rate credits; and the shift of funding to rate credits would come at the expense of projects that would make the grid better able to accommodate distributed energy

Continued on page 19

Exelon Closes Pepco Merger Following OK from DC

Continued from page 18

resources.

In offering the settling parties the retooled agreement, the commission already had judged it to be in the public interest.

Fort and Phillips said their revised settlement ensures that the district receives the $72.8 million CIF, which will be used for rate relief, energy conservation programs and projects to modernize the distribution grid and enable it to accept more distributed resources, "thereby further promoting the district's sustainability agenda."

"These are all funds that will not be available to district ratepayers or the district if the merger is not approved," they said, adding that the changes made to the Bowser settlement "ensure that the district's market remains a competitive one for suppliers who want to bring more renewable energy resources to our city while still requiring Exelon to invest in 7 MW of new solar in the district and 100 MW of new wind" in PJM.

Disappointment and Surprise

Power DC, a coalition formed against the deal, said, "We are profoundly disappointed and saddened that the D.C. Public Service Commission has ignored the clear opposition to the proposed Exelon-Pepco merger voiced by the district's elected officials, community and business leaders, and residents.

"By approving the merger, the PSC has exposed our city to decades of higher rates, weakened its own ability to guide our city's energy future and helped ensure that D.C. will fall behind the rest of the U.S. on clean, efficient energy."

"I don't think we're surprised" at the ruling, said Williams Fields, senior assistant in the Maryland Office of People's Counsel, which has appealed the Maryland Public Service Commission's earlier approval of the deal. "It's been down a long path. We haven't read the ruling yet. We will have to evaluate on how it impacts Maryland in regards to additional funding from our most-favored-nation status. And, of course, we will have to see how it affects our appeal."

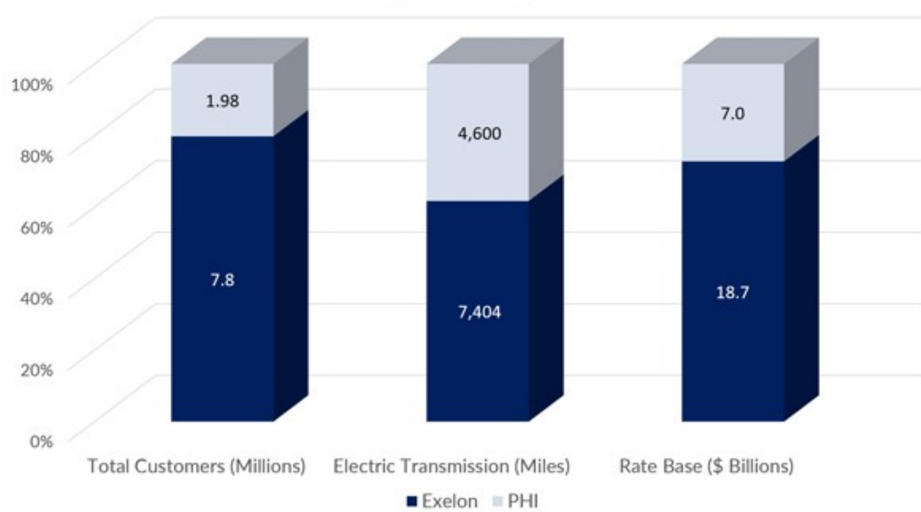
Montgomery County, Md., Councilman Roger Berliner, who had campaigned against the merger, said in a statement that the merger approval was "deeply disappointing."

"Its approval now means that Exelon will totally dominate the Maryland market," he said. "Environmental and consumer interests were needlessly sacrificed. The only winners are Pepco shareholders and Exelon's bottom line, a bottom line that has been hammered by its huge investment in nuclear power."

David Bonar, Delaware's Public Advocate, said he was "pleasantly surprised."

"I'm glad to see that it is finally resolved. Each jurisdiction has its own idiosyncrasies and partners who have a right to input, and I'm glad they all had an opportunity to add their input," he said.

"I think the [D.C.] PSC made the right decision. Now, we have to figure out exactly what it means to us in regards to additional funding. It will come out to several millions of dollars. I certainly hope we can give energy users some long-term benefits, like meaningful energy efficiency programs."



Exelon and Pepco Holdings Inc. combined *Source: Exelon*

The Apartment and Office Building Association of Metropolitan Washington was the only settling party to file its support of the commission's revised proposal.

Those opposing it were the National Consumer Law Center, National Housing Trust and National Housing Trust-Enterprise Preservation Corp., the D.C. Office of the People's Counsel, the Bowser administration and the D.C. Water and Sewer Authority.

They took issue with the PSC's requirement that $25.6 million of the CIF earmarked for residential rate relief be held in escrow until the next Pepco rate case and then be considered for disbursement, including to nonresidential customers.

"Despite the commission's perplexing approval of a proposal that OPC and most of the other settling parties rejected, the Office of the People's Counsel is fully prepared to continue to aggressively advocate for ratepayers and fight to ensure that rates remain affordable for consumers, particularly for our most economically vulnerable residents," People's Counsel Sandra Mattavous-Frye said.

The NCLC and the NHT were the only settling parties to voice support for the companies' third alternative.

"Should option three be rejected, the merger is likely to collapse," they said. "From the perspective of NCL/NHT, this is contrary to the public interest and particularly contrary to the interests of low-income households in the district."

The General Services Administration, the largest consumer of electricity in the district, had not signed on to the settlement negotiated by Bowser but had voiced concern that the included rate relief would not be disbursed to non-residential customers. It initially supported the commission's revised proposal, which addressed that issue, but on March 17 filed comments urging the PSC to reject Exelon's filing.

Exelon has spent an estimated $259 million over the past two years trying to capture Pepco's $7 billion rate base.

Ted Caddell contributed to this article.

Company Briefs

Duke's New Project is Flush with Poop Power

Duke Energy has announced plans to buy power produced from methane collected from livestock waste.

Duke has contracted with Carbon Cycle Energy, which will build and own a plant that will generate enough electricity from chicken and swine waste to power about 10,000 homes a year.

The plant will likely be located in eastern North Carolina. The state, which falls just behind Iowa as the country's largest pork-producing state, requires utilities to produce power from swine and poultry waste. The state's renewable energy law also requires utilities to procure 12.5% of its power from renewable sources by 2021.

More: *Insurance Journal*

Black Hills Energy Starts Construction on Tx Line

Black Hills Energy has started construction on a 144-mile, $54 million transmission line that will run from northeast Wyoming to Rapid City, S.D.

The 230-kV Teckla-to-Rapid City project is about a year behind schedule because of delays to get permission from property owners, who held out for higher easement payments. The company also needed permission from the federal government to run the line through the Black Hills National Forest.

More: *Rapid City Journal; Black Hills Energy*

Atlantic Coast Pipeline Sells 96% Of Capacity, Surveys 90% of Route

The operator of the Atlantic Coast Pipeline, a $5 billion pipeline that will deliver natural gas from Appalachian shale fields to Virginia and North Carolina, has sold 96% of the future pipeline's capacity and surveyed 90% of the 550-mile route, according to an update from the company.

Dominion Energy President Diane Leopold said 90% of the 2,800 landowners along the route have allowed survey teams on their land and 500 have signed easements. She also said that a Pennsylvania steel mill is set to start manufacturing the pipe in a $400 million contract.

More: *The Associated Press*

Ex-Austin Energy Chief Confirmed As Seattle City Light's GM, CEO

The former head of Austin Energy was approved as Seattle City Light's general manager and CEO, despite criticism over his January remarks that Austin's utility should be run by an independent board and not the City Council.

The Seattle City Council voted 7-2 to confirm a four-year appointment of Larry Weis to run the city's electric utility. He will earn $340,000 a year.

Council members made few explicit references to Weis' time at Austin Energy, but his record was central in the public testimony at his confirmation hearings. His supporters praised him for winning over the union that represents Seattle City Light workers and for his decision to hire a director of environment and sustainability issues.

More: *Austin American-Statesman*

Lincoln Electric Plan Calls for $453M in Upgrades, Expansions

Lincoln Electric System, the Nebraska public utility serving the state capital region, approved a six-year $453 million capital budget to replace and upgrade infrastructure.

Lincoln Electric, an SPP member that has about 120,000 customers, says it expects to add 9,400 customers, move the overhead service lines for 1,800 customers underground and add 44 MW of new load to its system. Its two most costly projects call for $204 million to update overhead and underground distribution and transmission lines and $152 million for power generation facilities.

Almost $100 million is slated to update power plants to comply with EPA's Clean Power Plan.

More: *Lincoln Journal Star*

2 Westar Employees Threatened by Residents When Changing Meters

Two Hutchinson, Kan., residents were arrested in separate incidents for threatening Westar Energy employees who swapped out their old electric meters.

County officials charged a resident who held a Wester employee at gunpoint with aggravated assault and kidnapping. Four days earlier, deputies arrested another Hutchinson resident who threatened bodily harm to a Westar employee who had changed his meter.

More: *The Hutchinson News*

Duke Energy's California Deal Expands its Solar Stable

Duke Energy Renewables has purchased a proposed 20-MW solar project in California from EDF Renewable Energy. The project, to be built in San Bernardino County near Barstow, will be called the Longboat Solar Power Project.

The output and the renewable energy credits are being sold to Southern California Edison in a 20-year power purchase agreement.

The project, which is expected to come online by the middle of this year, will bring Duke's solar stable in California to 130 MW. Duke's regulated and commercial businesses have invested more than $4 billion in solar and wind generation over the past eight years.

More: *Duke Energy*

Dynegy Announces Closure Of Wood River Plant in June

Dynegy's coal-fired Wood River plant in Illinois will be shuttered in June after a MISO study concluded it was no longer needed to ensure reliability in the region.

The company said the plant was unprofitable under MISO's "poorly designed" capacity market. About 90 jobs will be lost when the plant closes. The plant also pays about $1.6 million in community property taxes.

Dynegy anticipates that cleaning up the West Alton plant's coal ash ponds will cost $18 million. The plant produced 465 MW from its two units, which went into service in 1954 and 1964.

More: *The Telegraph*

FEDERAL BRIEFS

NRC Sends 'Chilling Effect' Notice to TVA About Watts Bar

The Nuclear Regulatory Commission sent a letter to the Tennessee Valley Authority outlining allegations of a "chilling effect" at its Watts Bar Nuclear Plant, where control room operators have expressed concerns about raising safety issues. NRC earlier this month said it was looking into the issue, but sending the letter formalizes its intent to investigate.

"While we believe TVA management understands these issues, the chilling effect letter documents the NRC concerns and our expectations that TVA fully address them and ensure that all plant employees feel free to raise any safety problems," NRC Region II Administrator Cathy Haney said in a statement. The letter gives TVA 30 days to respond.

"I think it's important to note that neither NRC nor TVA have found evidence of any actual retaliation, but both have found that just the perception that retaliation has happened can have the same effect," TVA spokesman Jim Hopson said. "This is just as serious to us as any type of actual retaliation."

More: *Knoxville News Sentinel*

Protesters Arrested at FERC 'Pancakes not Pipelines' Event

Source: PopularResistance.org

A documentary filmmaker and six others were arrested after they blocked the garage entrance of FERC headquarters to protest a pipeline project that would deliver Marcellus Shale natural gas to Northeastern markets.

Josh Fox, the maker of the anti-drilling film "Gasland," was part of the protest, in which FERC commissioners were invited to sample pancakes topped with maple syrup produced from trees that were cleared for the Constitution Pipeline in Pennsylvania.

"It is clear to me that FERC has to be the most destructive agency in the United States right now," said protester and syrup producer Megan Holleran. "They are faceless, nameless, unelected and ignore citizen input."

More: *Beyond Extreme Energy*

Circuit Court Gives Sierra Club Chance to Obtain Entergy Records

A federal appeals court will allow the Sierra Club to make its case in federal court to obtain records that Entergy supplied to EPA about two Arkansas coal plants and a third plant in Louisiana.

The 5th U.S. Circuit Court of Appeals ruled in favor of the Sierra Club's efforts to obtain the documents, which concern the 1,700-MW Independence and White Bluff coal plants in Arkansas, which operate without major emission-reducing scrubbers. The third plant is a 30-year-old coal plant near Lake Charles, La.

Glen Hooks, director of the Sierra Club of Arkansas, said his organization uses such emissions documents to monitor whether Clean Air Act violations are occurring. "I don't think we're going to have a lot of trouble getting the documents now," he said.

More: *Arkansas Democrat-Gazette*

Tennessee Gas Seeks Pipeline Challenge Dismissal

Tennessee Gas Pipeline has asked FERC to dismiss an attempt by an advocacy group to block construction of a 4-mile pipeline spur that cuts through a state-protected forest in western Massachusetts.

The filing opposes a motion by Sandisfield Taxpayers Opposing the Pipeline to prevent immediate tree-cutting. The regulators approved the pipeline project on March 11. The loop is part of a 13-mile, $87 million Connecticut Expansion Project that would provide additional natural gas to three utilities.

The state of Massachusetts is also trying to delay the project, arguing that the state constitution protects the woodlands unless lawmakers grant an exemption, which they have declined to do.

More: *The Berkshire Eagle*

Energy Companies Bid $156M For Gulf Drilling Leases

Thirty exploration companies bid $156 million to lease 128 oil and natural gas tracts in the central section of the Gulf of Mexico. The area covers nearly 700,000 acres 3 to 230 nautical miles off the coasts of Louisiana, Mississippi and Alabama.

While bidding was heavy for the central section, no bids were received for the Eastern Planning Area, according to the Bureau of Ocean Energy Management.

More: *World Oil*

Feds Approve Research Wind Facility Offshore Virginia

The Bureau of Ocean Energy Management approved construction of two 6-MW wind turbines to be installed 27 miles off the coast of Virginia as part of a research project to test how the turbines hold up under harsh conditions.

"Data collected under this research lease will help us better understand the wind potential, weather and other conditions off of Virginia's coast," BOEM Director Abigail Ross Hopper said.

Dominion Resources issued a request for bids for the research turbines last year. The bids came back between $375 million and $400 million, about twice as high as expected, so Dominion delayed the project's start date from 2017 to 2018. Dominion has a lease on 113,000 acres for offshore wind development.

More: *The Associated Press*

EPA Believes it has Mapped Extent of Nuclear Waste

Radiation from nuclear waste that was buried in the 1970s has migrated farther than once thought, according to EPA. The waste in the West Lake Landfill near St. Louis comes from uranium processing of material for the Manhattan Project in the 1940s.

EPA said mapping shows some of the waste products seem to be about 600 feet further than thought, but the agency downplayed the risk. "While the footprint of the [radiologically impacted material] has changed … there's still no significant health risk posed by the radioactive waste at the West Lake Landfill," EPA's Brad Vann said.

EPA is mapping the waste as part of an investigation to determine how to build a barrier to contain the material.

More: *St. Louis Post-Dispatch*

STATE BRIEFS

REGIONAL

ISO-NE Launches 2016 Regional Electricity Outlook

New England's power grid is on course to becoming a hybrid system in the next decade, where up to 20% of its resources are provided by retail customers or by local distribution utilities, according to ISO-NE's 2016 Regional Electricity Outlook.

Among the report's highlights: More than 4,200 MW of the region's conventional nuclear, coal- and oil-fired generating capacity has retired recently or is scheduled to retire soon; about a third of the 13,000 MW of proposed generation projects are wind resources; and pipeline constraints and few delivery points for LNG will continue to pose challenges for fuel supply.

More: *ISO-NE*

Study: 569,000 Clean Energy Jobs in Midwest

The 12 Midwestern states are home to nearly 569,000 clean energy jobs, with projected employment growth of 4.4%, according to a study by Chicago nonprofit Clean Energy Trust. Kansas and Indiana both had below-average predicted growth in the sector, while Missouri leads with a projected growth of 8.3%.

The analysis is based on U.S. Bureau of Labor Statistics data and a survey of thousands of businesses in the region. The comprehensive report not only breaks down job numbers by state, but by Congressional and state legislative districts as well.

The study also found that energy efficiency is by far the leading clean energy sector, employing more than 423,000. The runner-up, renewable energy, boasts about 70,000 jobs.

More: *Solar Industry Magazine*

CONNECTICUT

Emissions Would Spike Without Millstone Plant

If Dominion Energy's three-reactor Millstone Power Station were to close, more than 1,000 jobs would be lost and carbon emissions in New England would increase by 27%, officials told a legislative panel.

The nuclear plant is not endangered, but the General Assembly's Energy and Technology

Committee discussed the announced closure of Pilgrim nuclear station in Massachusetts as the industry struggles to remain financially viable in a market flooded with cheap natural gas.

"I do not anticipate in the short term the need to shut down Millstone," said Daniel G. Stoddard, senior vice president of nuclear operations for Dominion. "However, the challenges exist, the challenges are significant and the trends continue to make those challenges more difficult." The Waterford facility is the largest nuclear power station in New England; it provides about 2,100 MW, or roughly half of Connecticut's electrical consumption.

More: *Hartford Courant*

ILLINOIS

ComEd Using Smart Meters To Gauge GHG Effects

Commonwealth Edison will begin using data collected by smart meters to calculate greenhouse-gas reductions that can be linked to initiatives to reduce peak demand.

The Chicago utility is using a metric proposed by the Citizens Utility Board and the Environmental Defense Fund to calculate emission reductions at specific hours. A kilowatt-hour saved during times of high carbon intensity, when more power is generated by less efficient means, is more valuable than one saved during periods when more renewable energy is being pumped onto the grid.

"As the first utility in the country to adopt this greenhouse gas measurement tool, ComEd is leading the way to a cleaner energy future," said Dick Munson, EDF's Midwest director of clean energy.

More: *SmartGrid News*

LOUISIANA

PSC Postpones Action On $4.9B Cleco Acquisition

State regulators on March 21 agreed to postpone until this week whether to reconsider their rejection of international investors' $4.9 billion bid for Cleco. The Public Service Commission is considering whether to change last month's order that nixed the acquisition of the utility.

More: *The Advocate*

MASSACHUSETTS

Former Secretaries Support Baker Bill

Three former state energy secretaries are supporting Republican Gov. Charlie Baker's proposal to solicit long-term contracts for hydropower.

Baker

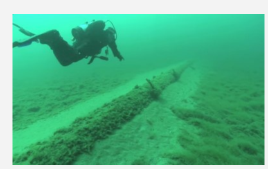
Maeve Vallely-Bartlett, Rick Sullivan and Ian Bowles, who served under former Democratic Gov. Deval Patrick, offered bipartisan support for legislation requiring utilities to solicit long-term contracts for hydroelectric power. Administration officials have said this would increase the use of hydroelectric power in the state, which is necessary for it to meet its goals for reducing carbon emissions.

The legislation remains bottled up in a legislative committee, although House Speaker Robert DeLeo (D-Winthrop) has said it could be reported out soon. Conventional power generators and environmentalists who support solar and wind energy have criticized the bill.

More: *MassLive.com*

MICHIGAN

State Wants Pipeline Condition Information from Enbridge



State officials, concerned about the possibility of leaks from pipelines that run under Lake Michigan, have asked Enbridge to provide specific condition information on Line 5, a pair of pipelines that cross the Straits of Mackinac.

The 63-year-old pipelines were recently declared safe by the company, but Enbridge released little detail on its inspections. The

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STATE BRIEFS

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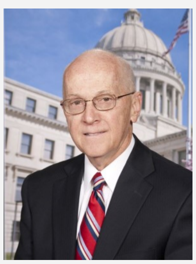
state has requested reports from the inline inspection robots used to check on the pipelines' condition. The state is hiring an outside analyst to review the data.

"The attorney general has said, time and time again, that the days of this pipeline are limited," said spokeswoman Andrea Bitely. "And doing these independent analyses — this independent risk analysis and the alternative analysis — will tell us what's next."

More: *Michigan Radio*

MISSISSIPPI

Commissioner Says Kemper Will Be Watched Closely



Brown

Public Service Commissioner Cecil Brown said Southern Co.'s costly Kemper Project will be closely watched when it goes into operation this year. Brown said monitoring the coal-gasification power plant will be the commission's biggest challenge in the coming months.

"There are people out there who say Kemper is dangerous," Brown said at the Stennis Institute's monthly luncheon. "I don't know about that, because I'm not an expert. I've talked extensively with Mississippi Power and I've raised that question and I've been assured that it is safe."

The plant's gas synthesizer is supposed to go online later this year.

More: *Watchdog.org*

MONTANA

Judge Nixes Water Permit For Rosebud Coal Mine

DEQ Montana Department of Environmental Quality

A state district judge has struck down a water-discharge permit for a southeastern coal mine, saying officials failed to fully consider the effects of pollutants on several nearby creeks.

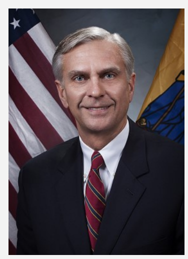
In a March 14 decision, Judge Kathy Seeley ordered the Department of Environmental Quality to reconsider the mine's water discharge permit. She said the agency had shown "clear errors of judgment" in allowing reduced monitoring of pollution from the mine and reclassifying surrounding waterways so they were subject to less stringent pollution standards.

A separate challenge of the state's approval of a 12-million-ton expansion of the Rosebud mine is pending before the Board of Environmental Review. The Rosebud strip mine produces about 9 million tons of coal a year, primarily for the Colstrip power plant.

More: *Billings Gazette*

NEW JERSEY

BPU Imposes Cybersecurity Policies on Utilities



Mroz

Regulated utilities will be required to follow a new set of cybersecurity protocols under policies adopted by the Board of Public Utilities.

The requirements are designed to protect customer information and grid reliability, according to the board. The new standards are based upon recommendations from the state Cybersecurity and Communications Integration Cell, with input from the FBI.

"To ensure that we continually meet the challenges of this ever-changing threat, we have made certain that these policies are uniform yet flexible, promote information-sharing and are capable of evolving as the threat landscape emerges," BPU President Richard Mroz said.

More: *Homeland Preparedness News*

NEW MEXICO

Environmental Group Calls for Investigation of Commissioner

An environmental advocacy group has asked the state Secretary of State to investigate Public Regulation Commission Vice Chairwoman Karen Montoya, alleging she has violated the Government Conduct Act through her communications with executives of an electric utility that she regulates.

Montoya

New Energy Economy, a group that has been engaged in several legal battles with the PRC in the past year, filed the complaint March 17. It said in September several commissioners, including Montoya, were overly friendly with representatives of Public Service Company of New Mexico.

The state Supreme Court considered the complaint in late 2015 before dismissing it.

More: *The Santa Fe New Mexican*

PENNSYLVANIA

Quaker Group Urges PECO to Embrace Philly Solar Project

The advocacy group Earth Quaker Action Team is demanding that PECO Energy purchase power from potential solar installations in North Philadelphia, one of the city's poorest areas.

The group predicts that investors will come forward for solar projects if PECO demonstrates there is demand for the output.

A PECO spokesman said that while the utility is open to considering such a program, it is legally required to buy competitively priced electricity.

More: *StateImpact*; *The Philadelphia Inquirer*

TENNESSEE

Colbert Fossil Plant Closes after 61 Years

After 61 years of providing electricity to the Tennessee Valley, the Colbert Fossil Plant has been disconnected from the grid.

The Tennessee Valley Authority said more than a year ago that the plant would close by April 15, when new regulations for mercury and air toxins go into effect.

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State Briefs

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Employees were offered transfers to similar jobs at other TVA fossil fuel plants.

More: The Chattanoogan.com

TEXAS

Environmental Groups Try to Block Nuclear Expansion

Environmental groups want the Nuclear Regulatory Commission to revoke licenses for two new reactors at the South Texas Project, claiming the project is controlled by a foreign owner in violation of the Atomic Energy Act.

Public Citizen, the Sustainable Energy and Economic Development Coalition and the South Texas Association for Responsible Energy say Japanese company Toshiba, which owns 10% of Nuclear Innovation North America, has been fully funding the pre-licensing proceedings for two new reactors. "In our view, the entity who funds it then has the ability to control it," said Robert Eye, an attorney representing the groups. NRG Energy owns 90% of the project.

NRC recently approved two new reactors at the site southwest of Houston, where two reactors currently produce about 2,700 MW. NRG is holding off on building the reactors because of low natural gas prices and a lack of demand for new energy in the state.

More: Victoria Advocate

VERMONT

Renewable Energy Siting Legislation Opposed

Critics of the state's process for selecting sites for renewable energy projects are opposing proposed legislation designed to give regional planning commissions greater say in where solar and wind power projects are located.

Leaders of the Energy Transformation Coalition and Energize Vermont said Senate Bill 230 still gives the Public Service Board too much ability to override the wishes of residents when approving renewable energy projects.

"Energy developers are running roughshod over our communities," said Mark Whitworth, president of the board of Energize Vermont. "The result is an energy rebellion that has now spread to 128 towns."

More: The Associated Press

WISCONSIN

PSC: State's Electricity Rates Among Highest in Midwest

Electricity rates in the state are among the highest in the Midwest, but residents pay less than customers in surrounding states because they use less power on than average, according to a recent study by the Public Service Commission.

The study found that 2015 rates in the state were higher for residential, commercial and industrial users than in Michigan and six other Midwestern states. But the same study showed that the typical monthly residential bill was $8 less than those in other states, due to lower consumption.

More: The Associated Press

CAISO Seeks Rapid Response to Impending Southern Calif. Gas Restrictions

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requirements would require revising market rules, both to make dispatch more predictable and to allow generators to recover the cost of the penalties after the fact. Among the multiple options CAISO is putting on the table for stakeholder consideration:

- Enforcing day-ahead commitments for all resource types as binding in the real-time market;
- Constraining dispatch decisions around day-ahead market schedules;
- Limiting real-time market instructions to exceptional dispatches (manually issued orders used when reliability requirements cannot be resolved through market software); and
- Allowing resources to request outages to manage their fuel constraints.

Market-based solutions include allowing energy bids to reflect intraday gas prices and including the gas balancing penalties in bid cost estimates, both of which would likely require Tariff revisions. CAISO said it could ask FERC for a waiver of 50-day notice to expedite any such changes.

"Including these costs in the market optimization is great," said NRG's Theaker. "Not just including it in the market, but allowing generators to recover it [after the fact]."

Pasadena's Johnson concurred: "After-the-fact recovery through [bid cost recovery] resettlement sounds more appropriate."

Whatever the solutions, CAISO has set an ambitious schedule to arrive at an outcome. The ISO plans to issue a straw proposal on the subject April 1, with a draft final proposal scheduled for April 15. Final stakeholder written comments are due April 29. But even that aggressive timeframe is causing some discomfort among market participants.

"At the risk of stating the obvious, SoCalGas has asked for the daily balancing to be implemented May 1, and the stakeholder process runs right up to that," Theaker said. "What does CAISO plan to do?"

"This timeline could be compressed even further," said CAISO's Colbert.

How a ‘Phantom Mouse’ and Weaponized Excel Files Brought Down Ukraine’s Grid

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field staff went to substations and manually reclosed breakers, restoring all of the customers to service in three to six hours.

“It is important to note that there are risks operating your system without the benefit of an automated dispatch control center, and utilities that are more reliant on automation may not be able to restore large portions of their system this way,” said Michael Assante, SANS Institute director of ICSs and one of the report’s authors, in a January blog post. “In many ways, the Ukrainian operators should be commended for their diligence and restoration efforts.”

Missed Opportunities

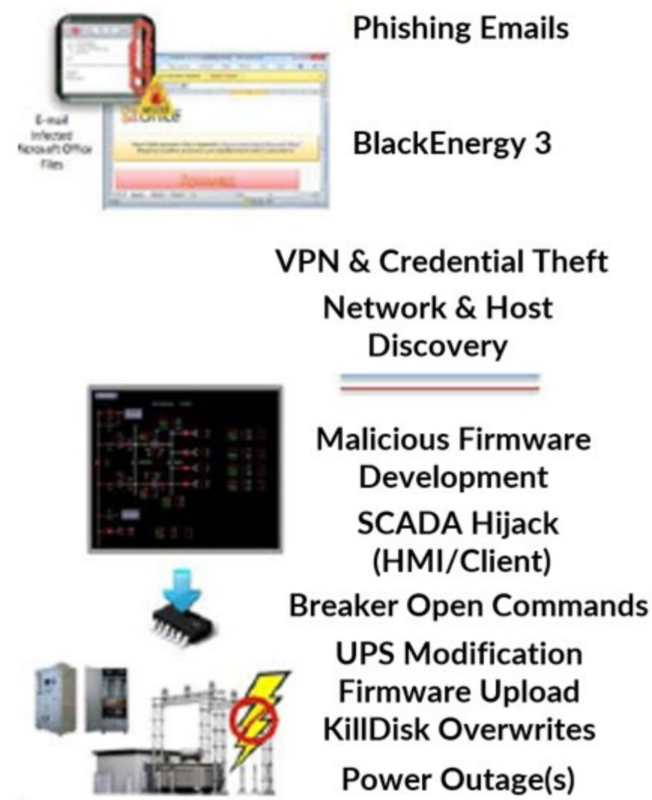
While the report’s authors found the companies’ restoration admirable, they had plenty to criticize, saying the utilities missed opportunities to detect the intrusion during the months of reconnaissance and testing that preceded the attack.

According to the report, the companies’ firewalls allowed the adversaries to exercise remote control, and the VPNs from their business networks into the ICSs appeared to lack basic two-factor authentication; think cash machines, which require both a bank card and a personal identification number.

The companies also appeared to lack the capability to continually monitor their ICS networks for increased traffic that could indicate rogue firmware updates, the report said. “In a prolonged attack campaign, there are likely numerous opportunities to detect and defend the targeted system.”

Why the three oblenergos were targeted is unclear, but John Hultquist, director of cyberespionage analysis for computer security firm iSight Partners, said he believes the attacks were the work of hackers aligned with the Russian government. He told *The Washington Post* that there are links between the malware used in the attacks and a cyberespionage campaign against NATO and Western European governments by a group of Russian hackers iSight named “SandWorm.”

iSight said it has documented SandWorm infiltrations of Ukrainian government computer systems and telecommunications and energy companies since 2014, when Russia annexed Crimea in support of separatists in eastern Ukraine.



How cyberattack shut down Ukrainian power companies *Source: NERC, SANS Institute*

Recommendations

The report concludes with a number of recommendations, including eliminating unnecessary VPN pathways and developing “cyber blackstart” capabilities. But it warns that “it is likely that the adversary will modify attack approaches in follow-on campaigns and these mitigation strategies may not be sufficient.”

Some analysts were initially skeptical of the Ukrainian government’s claims that the outages were the result of cyberattacks. “ICS organizations frequently have reliability issues and incorrectly blame cyber mechanisms such as malware found on the network that is unrelated to the outage,” the report said.

In this case, however, the report’s authors had no doubt about the credibility of the government’s and utilities’ claims. It also ranked the technical information available a 4 on a scale of 5, citing the availability of malware samples, observable ICS impacts, technical indicators and firsthand interviews.

The attack marks “the first time the world has seen this type of attack against [operational technology] systems in a nation’s critical infrastructure,” the report said. “This is an escalation from past destructive attacks that impacted general-purpose computers and servers (e.g., Saudi Aramco, RasGas, Sands Casino and Sony Pictures).”

The report said there was nothing about Ukraine’s infrastructure that made it uniquely vulnerable.

“The impact of a similar attack may be different in other nations, but the attack methodology, tactics, techniques and procedures observed are employable in infrastructures around the world.”

“The strongest capability of the attackers was not in their choice of tools or in their expertise, but in their capability to perform long-term reconnaissance operations required to learn the environment and execute a highly synchronized, multistage, multisite attack.”

NERC, SANS Institute