RTO Insider
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CAISO Finalizes Rules for DR, DG

By Jason Fordney

CAISO finalized a set of updates to its proposed policies on demand response and distributed generation, saying there is strong stakeholder support for the new rules to be presented to the Board of Governors in July.

The grid operator has been working on three related but distinct proposals regarding DR, non-generator resources and multiple-use applications. (See *CAISO Proposes Rules for Distributed Resources, Storage*.)

An incremental approach would be best as CAISO learns from the changes stemming

Continued on page 15

Nuke Subsidy Debate Touches Down in NE

By Michael Kuser

BOSTON — When Connecticut Consumer Counsel Elin Swanson Katz decided to support a controversial bill to provide state financial support for Dominion Energy's Millstone nuclear plant, it strained relationships.

"In fact, some of our closest allies barely spoke to me during the [legislative] session," she said.

Continued on page 7

More NE Conference Coverage

NERC: Despite Solid 2016, Grid Threats Remain

By Rory D. Sweeney

The North American grid was very reliable in 2016, but threats are increasing and restoration from a total system collapse could prove time-consuming, two recent nationwide studies found.

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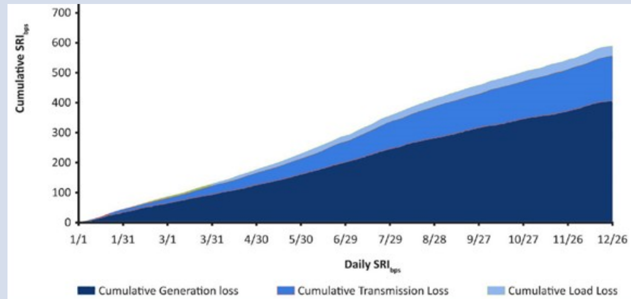

2016 cumulative severity risk assessment by component | *NERC*

More Reliability Coverage

ANALYSIS: Senate Questions to FERC Nominees Reflect Democratic Wishlist

By Michael Brooks

President Trump's nominees to FERC gave nearly identical, boilerplate answers to senators' written questions on issues ranging from hydroelectric project licensing to natural gas infrastructure following their confirmation hearing last month.

The questions, mostly from Democratic and left-leaning independent senators, provide more insight into a party grappling with being in the minority under a presidential administration hostile to environmental issues rather than the nominees themselves.

Neil Chatterjee (left) and Robert Powelson are sworn in atconfirmation hearing before the Senate Energy and Natural Resources Committee last month. | © *RTO Insider*

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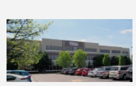
Also in this issue:



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ANALYSIS: Senate Questions to FERC Nominees Reflect Democratic Wishlist

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Robert Powelson, a Pennsylvania Public Utility Commissioner, and Neil Chatterjee, senior energy adviser to Senate Majority Leader Mitch McConnell (R-Ky.), toed the FERC line, declining to answer questions about specific cases pending before the commission. The two, who were each approved 20-3 by the Energy and Natural Resources (ENR) Committee on June 6, are awaiting a confirmation vote by the full Senate. (See *FERC Nominees Easily Advance to Full Senate*.) No vote has been scheduled as of last week.

They pointed to recent technical conferences when asked about state energy policies and barriers to participation in the wholesale markets to energy storage, saying they were "eager" or "looking forward" to reviewing comments the commission has received.

They also provided similar answers to questions about Order 1000, about which nearly every senator who submitted written questions asked.

Senators expressed concern that there were still problems with the interregional transmission process. Sen. Joe Manchin (D-W.Va.) in particular quoted PJM CEO Andy Ott and SPP CEO Nick Brown's criticisms of Order 1000 at the *RTO Insider*/SAS ISO Summit in March. (See *PJM, SPP Chiefs Share Frustration with Order 1000*.)

Both nominees said they were supportive of the order and pledged to carefully consider stakeholder feedback on last year's technical conference. "I am a strong advocate for interregional transmission planning and, in my view, the commission's implementation Order No. 1000 is a work in progress," Powelson said.

The nominees also asserted that changes to how the commission administers the Federal Power Act, the Natural Gas Act and the Public Utility Regulatory Policies Act should come from Congress, not FERC.

Sen. Maria Cantwell (D-Wash.), for example, noted that while the electric industry is subject to mandatory cybersecurity standards, gas pipelines are only subject to voluntary guidelines issued by the Transportation Security Administration. She asked the nominees whether they agreed that there should be mandatory standards for pipelines.

"I defer to Congress and the Transportation Security Administration (TSA) as to the

Robert Powelson (right) listens as Neil Chatterjee speaks at their confirmation hearing before the Senate Energy and Natural Resources Committee last month. | © *RTO Insider*

adequacy of TSA's natural gas pipeline cybersecurity program," Chatterjee answered. "Congress has granted TSA authority to establish mandatory cybersecurity regulations for natural gas pipelines."

"Congress and the TSA are in the best position to evaluate TSA's current natural gas pipeline security authority to determine if natural gas pipelines should be subject to additional or mandatory cybersecurity standards," was Powelson's answer.

Senators also asked questions particular to their individual states. Sen. Al Franken (D-Minn.) asked about problems with coal transportation by railway in Minnesota — another TSA issue, the nominees said.

But Sen. Tammy Duckworth (D-Ill.) asked about states served by multiple RTOs — which include Illinois. "States that are split into two RTOs are encountering issues where generating resources have been separated from the loads that they were built or contracted to serve," she said. "How should proximity to resources, actual power flows and pre-existing transmission rights be considered in RTO modeling?"

Both nominees said they could not answer, as it was a question pending before the commission.

Environment and Climate Change

Powelson and Chatterjee's deferral to Congress extended to questions about environmental impacts, climate change and increasing the use of clean energy resources, subjects about which every Democratic and liberal senator asked.

Sen. Bernie Sanders (I-Vt.), one of the three ENR members to vote against the nominees earlier this month, asked the nominees 52 questions — far more than any other senator — many of them related to the environment. Four questions asked in different ways whether the nominees accepted prevailing climate science.

Powelson and Chatterjee repeated their answers from their confirmation hearing that they understood climate change was real — and not a "hoax," as Trump has claimed. (See *No Fireworks for FERC Nominees at Senate Hearing*.)

But they said it was not FERC's place to regulate it or attempt to decarbonize the nation's energy mix.

"Any policy to mitigate carbon emissions should originate in Congress; it should not be designed at FERC," Chatterjee said. "Addressing climate change will require policy changes that the public accepts, and maintaining and enhancing affordability and reliability is vital to gaining that public acceptance. Should I be fortunate enough to be confirmed, my role as a FERC commissioner would be to ensure that any such policy not have a deleterious impact on reliability and affordability of our energy supply."

"My understanding is that FERC's policies are resource- and fuel-neutral," Powelson said. "The commission relies on competitive markets to provide just and reasonable rates and reliable service for consumers, and to send appropriate investment signals for developers. … If confirmed, I will refrain from picking 'winners and losers' in the energy marketplace, as that is not FERC's

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Stakeholder Soapbox

Noblis: Huntoon Microgrid Critique 'Seriously Flawed'

By Jeffrey Marqusee

Microgrid at the University of California, San Diego | *UC San Diego*

Steve Huntoon's March 13 column "Microgrid Kool-Aid and National Security" reviews the Noblis report "Power Begins at Home: Assured Energy for U.S. Military Bases" and raised a number of issues that he claims invalidate the study's conclusions. Huntoon's claims and conclusions are seriously flawed.

Huntoon cites a recent Government Accountability Office report that found outages can be attributed to on-base problems as opposed to the utility. He states that outages attributed to on-base issues cannot be solved: "if they were easily avoided, they would be." From this statement he concludes, incorrectly, microgrids cannot be the solution.

Our report specifically acknowledges that problems with on-base distribution systems must be corrected prior to using a microgrid and in most cases this can easily be accomplished. Currently, some outages on military bases are completely due to the utilities that serve the base (Fort Irwin), while others are due to on-base infrastructure issues (Camp Lejeune).

Fixing these on-base problems is well understood and routinely done. Simple activities such as tree trimming, routine maintenance and, when needed, undergrounding of distribution systems can and do reduce the issue to near zero. Fort Belvoir has demonstrated this through these actions over the last several years.

The main reason it has not been done at all bases is well recognized at the Defense Department and is the driver for utility privatization. Maintenance of on-base utility systems has been underfunded for decades. Fort Belvoir is a perfect example. Upon privatizing the on-base utilities, the frequency of outages attributed to on-base issues began to rapidly decline to near zero.

Huntoon argues that microgrids place military installations at risk to cyber threats. He implies that this risk should not be taken.

As the report explicitly states, cyber risks are real and must be addressed, but this was not the focus of our study. If you believe that cyber risks should be always avoided, then you cannot have advanced meters, smart buildings or network anything (including weapon systems). You network things because it buys performance advantages, as in the case of microgrids, and if you own the network you can manage that risk.

Huntoon seems unaware that cyber protection for microgrids exists. Cybersecurity solutions for microgrids have been demonstrated on bases by the government's Environmental Security Technology Certification Program and its Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS) program.

Huntoon says, "please note one other glaring oversight in the study. This one involves the estimated cost of microgrids." He claims the study's estimated costs are grossly wrong by comparing numbers he incorrectly quotes from the report with recent costs for a project at Marine Corps Air Station Miramar.

His comparison of our estimates and a real-world example at Miramar are grossly in error. He quotes our number for the capital costs of an all diesel generator system rather than the costs for one that is half natural gas and half diesel like Miramar.

The numbers he should have quoted from the report, which are relevant to Miramar, are twice the numbers he does quote. In addition, he ignored the costs of two microgrid control stations as well as other upgrades. In fact, our cost estimates, constructed prior to the award of the Miramar contract, when compared apples to apples is within 10% of the actual costs.

In the conclusion, Huntoon states, "And speaking of fact, the nation's 'flagship' microgrid at the University of California, San Diego flunked its acid test in the Southwest Blackout of 2011. The campus shut down with the rest of San Diego." He implies that microgrids don't work.

No one in the microgrid technical community believes that the U.C. San Diego microgrid is the "flagship" example. Using a decade-old, university-based microgrid as an example is strange at best. Dozens of microgrids have been demonstrated in recent years.

They all operate as designed during outages and provide assured power. For example, the White Oak microgrid, which is described in the report, has maintained power during dozens of outages, never experienced a failure and is saving money each year.

Jeffrey Marqusee, Ph.D., is chief scientist for Noblis, a nonprofit science, technology and strategy organization whose clients include many federal government agencies.

RESISTANCE
BY STEVE HUNTOON

Response: Microgrid Defense Misses the Point

By Steve Huntoon

Huntoon

Noblis continues to miss the basic point, which is readily apparent from two figures from its January 2017 report "Power Begins at Home: Assured Energy for U.S. Military Bases" (see graphic). The left figure is the status quo of individual building backup generators. The right figure is a microgrid.

As you can see, the microgrid *adds* exposure to military base distribution system problems because it is dependent on the distribution system. And distribution system problems cause the vast bulk of outages (87%).

This is not, as Noblis claims, a matter of "correcting" poorly maintained military base distribution systems, which Noblis would do by having the local utility assume responsibility for them.

Problems on local utilities' own distribution systems cause about the same percentage of their customers' outages (90%), as documented in footnote 5 of my column. Noblis does not address this.

The point is that most outages have nothing to do with poor maintenance, by military bases or by local utilities. Most outages are caused by severe weather, lightning, human error, unpredictable equipment failure, vehicle collisions, even metallic balloons and squirrels.

If local utilities had magic wands, they would wave them.

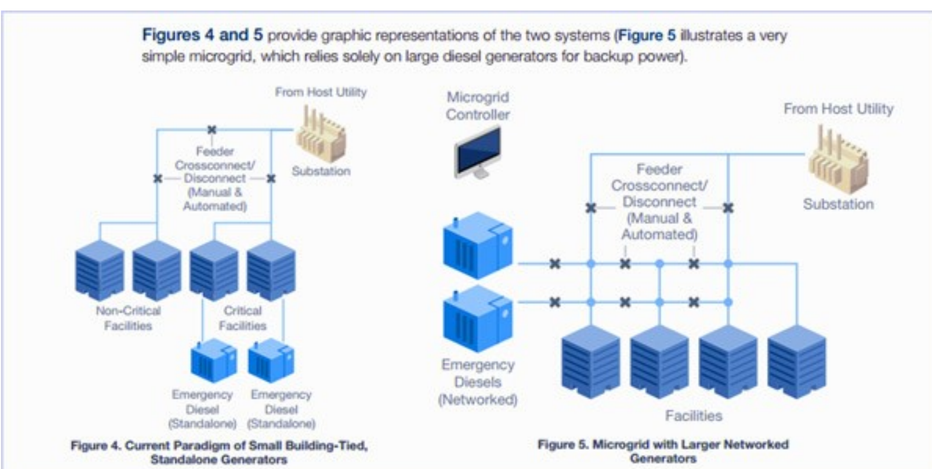
Noblis suggests undergrounding distribution systems to mitigate the added risk of microgrids, but it didn't add the enormous cost of undergrounding to its microgrid costs.[1] And it doesn't consider that service restoration of an underground line outage typically takes much longer.

Speaking of cost, Noblis says its hypothetical microgrid cost under its natural gas "Case B" is close to the real-world cost of the microgrid at Marine Corps Air Station Miramar. I can't reconcile this claim with the capital cost data Noblis presents in its Appendix C.2, which appear to be much lower. By the way, even if the Noblis data were right, its Case B is still uneconomic in the Northeast and Southeast regions that it modeled, and only economic in California.

And a few words about cybersecurity. My column did not suggest that no cyber protection exists for microgrids, simply that microgrids *add* cyber risk (and electromagnetic pulse risk) that does not exist with individual building backup generators.

The Department of Defense cyber protection that Noblis refers to is based on "limiting communication bandwidth within the network [microgrid]."[2] The dilemma is that operating a microgrid of substantial size in parallel, in order to get the peak shaving, energy savings and demand response benefits that Noblis is counting on, cannot be done without communications links with the regional grid operator and the local utility. In other words, you can have (1) high cyber protection through isolation, *or* (2) benefits of parallel operation, but not both. Noblis eats the cake and has it too.

Finally, Noblis criticizes my reporting that the University of California, San Diego (UCSD) microgrid flunked its acid test in the Southwest Blackout of 2011. Noblis says my reference to that microgrid as "flagship" was "strange at best." I didn't make that up — just Google "UCSD microgrid flagship" (without quotation marks).



Noblis

Steve Huntoon is a former president of the Energy Bar Association, with 30 years of experience advising and representing energy companies and institutions. He received a B.A. in economics and a J.D. from the University of Virginia. He is the principal in Energy Counsel LLP.

[1] The Edison Electric Institute estimates that undergrounding a distribution line costs up to $5 million per mile. http://www.eei.org/issuesandpolicy/electricreliability/undergrounding/documents/undergroundreport.pdf (page 31, Table 6.4).

[2] https://energy.gov/sites/prod/files/2016/03/f30/spiders_final_report.pdf (page 3-15). Microgrid Cyber Security Reference Architecture, which the DOD cyber protection follows (page 3-14), does not consider operational modes in which the microgrid is operating in parallel with the rest of the grid. http://prod.sandia.gov/techlib/access-control.cgi/2013/135472.pdf (page 23).

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New England Electricity Restructuring Roundtable

Offshore Wind Developers Ponder Transmission Options

By Michael Kuser

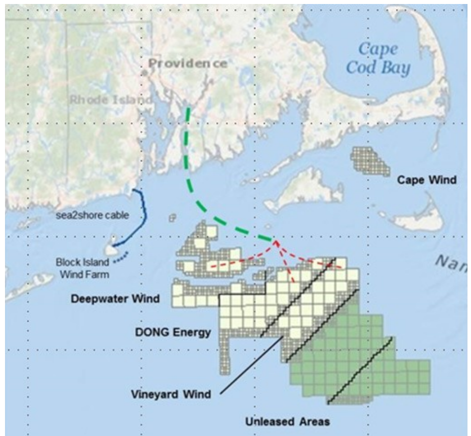
BOSTON — Massachusetts faces a big question in its plan to add 1,600 MW of offshore wind by 2027: What's the best way to get the power to shore?

The state, which is expected to issue a request for proposals by the end of the month for at least 400 MW, will ask the three winners of offshore wind leases to propose both underwater transmission cables for each of their projects and a single trunk line that would serve all three. Developers also will have to choose between high-voltage AC or DC lines.

The stakes, as a panel told Raab Associates' 154th New England Electricity Restructuring Roundtable on Friday, are high.

A multibillion-dollar offshore wind farm can be stranded for six months because of a single cable fault. However, developers can reduce their risk through contracts that provide compensation for transmission failures, said **Søren Hindbo**, senior director of electrical systems for DONG Energy. In addition, interlink cables among substations can allow electricity to be sent ashore even when an export cable fails, he said.

Denmark-based DONG — which has 26 years of offshore wind experience, with 21 European wind farms in operation and seven under construction — was one of three companies to win leases off of Massachusetts from the U.S. Bureau of Ocean Energy Management. Deepwater Wind and Vineyard Wind (formerly OffshoreMW) also won.



Massachusetts offshore wind area | *National Grid*

Hindbo described the contracts used in Germany, France, the Netherlands and Denmark, which provide wind developers compensation if there is a transmission problem. "You measure the wind speed on the wind farm and get compensated according to that, if for instance the connection is delayed or faulty. And that's very important, because who wants to invest in something and have your billions put up there and no chance of getting anything back because you haven't got an export connection?"

DONG expects two to three export cable faults per 100 km per 20 years, so having interlinks to provide alternative routes for delivering power is important, he said. "One benefit is you don't need diesels [for] a black start; also if you are delayed, which often happens … you are still in the game," Hindbo said.

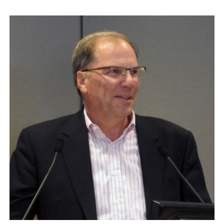
In Europe, developers have found HVDC lines more cost effective for the most distant wind farms and AC better for those closer to shore, with a break-even point between 100 and 200 km (about 62 to 124 miles).

The export cable represents up to 60% of the total cost in an HVAC system. The total percentage is somewhat lower with a HVDC system, Hindbo said, though the total capital expenditure is higher. The export cable is "the weakest and the most expensive part," he said.

Backbone or Alternatives?

Mike Calviou, senior vice president at National Grid USA, said the most cost-effective approach is a "coordinated and expandable" plan that accommodates future offshore resources, citing research showing it can reduce costs by 8 to 16%. National Grid connected the first offshore wind farm in the U.S. to the grid, the 30-MW Block Island project off Rhode Island.

"We believe coordination does provide a range of benefits: fewer cables; you get the economies of scale; the permitting complexity can actually be significant. There are certainly, we believe, some environmental and safety benefits," he said. "And particularly the expandability: When you know you are going to be doing more offshore wind … you can actually design for future expansion."



Anbaric's **Stephen Conant** said the RFP unwisely excludes transmission developers such as his company from participating in the design of a solution: They aren't permitted to respond to the RFP except in

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Left to right: Stephens, Conant, Calviou and Hindbo. | *© RTO Insider*

New England Electricity Restructuring Roundtable

Nuclear Subsidy Debate Touches Down in New England

Continued from page 1

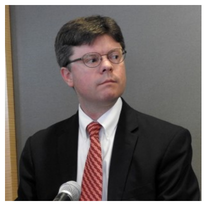
Katz's anecdote, related to an audience at the 154th New England Electricity Restructuring Roundtable on Friday, was one example of the schisms that have arisen in recent years as many former nuclear power opponents have traded their fear of meltdowns and nuclear waste for appreciation of the plants' ability to produce large amounts of power with no carbon emissions.

Similarly, Katz and other consumer advocates have had to consider whether losing a plant such as Millstone would be more expensive to ratepayers than any subsidies that would ensure its continued operation.

Opening a panel discussion featuring partisans on all sides of the nuclear debate, moderator Jonathan Raab observed: "The environmental community, like the consumer advocacy community, is not of one mind on the role of nukes in our society."

Low natural gas prices, flat demand growth and growing renewable generation have squeezed the finances of many nuclear plants, leading policymakers in New York and Illinois to approve subsidies in the form of zero-emission credits (ZECs). Officials in New Jersey, Ohio and other states are considering similar measures despite challenges to the Illinois and New York ZECs in court and before FERC. (See *Exelon Encouraged by Perry's Memo, Thinks ZECs Will Hold Up*.)

Blind Markets



Matthew Crozat of the Nuclear Energy Institute told the audience that states are stepping in to save nuclear plants because wholesale electric markets have failed to price carbon emissions.

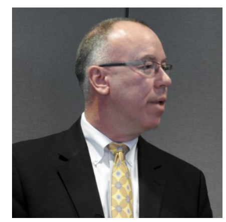
Crozat identified several plants that have closed or are slated for decommissioning by 2025. While some closed because of mechanical issues, "market forces claimed well operating plants," Crozat said. "They just could not see a way to recover their costs in the future, and that includes Vermont Yankee here in New England."

A combination of market forces and public policy pressures could result in the retirement of eight nuclear plants in the coming decade, for a total of about 12 GW of capacity, or some 60 million tons of CO_2 avoided annually, Crozat said.

"When Vermont Yankee closed [in 2014], all of its generation was replaced by natural gas," Crozat said. "This was not a surprise; it was the next available unit in the system. I think it was the first time in 15 years that carbon emissions from New England's power sector had gone up, and we saw the same pattern in California as well" following the loss of San Onofre in 2013.

Controversy in Connecticut

Earlier this month, the Connecticut General Assembly failed to pass a bill, S.B. 106, that would have allowed the 2,111-MW Millstone plant to bid into the state procurement process.



Opponents of the bill said it represented a burden on state ratepayers and an unnecessary handout to a power plant that had not been proven to be unprofitable.

John Shelk, CEO of the Electric Power Supply Association, who also spoke at the Roundtable, said Millstone is likely the most profitable nuclear plant on the East Coast. (See *Millstone No Dead Weight for Dominion,*

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Offshore Wind Developers Ponder Transmission Options

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partnership with one of the three wind developers/lease holders.

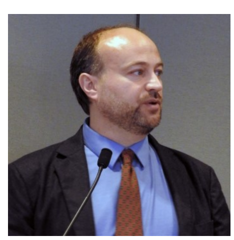
"We think competition is good for the industry," Conant said. "Putting generators in the transmission business seemed a little odd in the RFP. We have a system here that we separate transmission and generation by having a common transmission system [onshore]. That then allows … those generators to bid competitively into the market."

The RFP could give market power to the three leaseholders, he said.

"The way the construct is now, essentially if they pick one [bidder], then the first one in ... their tendency is going to be to sort of lean towards the expansion of their [initial] 400 or 800 [MW]. So you've essentially gotten a little market power that exists as a result of not letting others into the field."

Anbaric, which was among a group of entities that built the 660-MW Neptune HVDC cable linking PJM to Long Island Power Authority and the 660-MW Hudson project connecting PJM to New York City, is also developing the Vermont Green Line, a 400-MW project to deliver power from upstate New York into the New England grid.

Equal Treatment



Erich Stephens, CEO of Vineyard Wind, highlighted the risk of separating the transmission and generation projects. "If you separate as a matter of policy who builds the generation from who builds the cable, you basically have two projects going forward at the same time," he said. "Inevitably those projects are not going to be finished at the same time ... and that means you're going to have a very expensive asset sitting offshore that's not earning the revenue that it should."

Vineyard Wind was already working with Copenhagen Infrastructure Partners on its offshore wind projects before earlier this year selling a 50% stake to Avangrid Renewables to bid in the Massachusetts RFP.

New England Electricity Restructuring Roundtable

Nuclear Subsidy Debate Touches Down in New England

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Says Opponents' Study.)

Katz, however, said she was concerned about what the loss of the plant — which produces half of the electricity consumed in the state — would mean to the ratepayers she represents. "It would have provided a potential opportunity, in my view, to save electric ratepayers money, and the procurement process would have allowed me to oppose a potential contract if it did not do so," Katz told *RTO Insider* after the conference. "We did not think Millstone was at serious risk of closing, so we did not look at the proposed legislation through that lens."

If Millstone retired, the region would undoubtedly have to secure new generating capacity, which would result in higher capacity costs, she said.

"Connecticut and the region would presumably increase its reliance on natural gas and we would need more pipeline infrastructure to avoid infrastructure constraints. Connecticut, as you know, is at the end of the pipeline, and in cold winters that creates real problems for us."

In addition, Millstone's retirement "would likely see New England's electric sector emissions increase by as much as 8 million tons, or approximately 27%," Katz said. "Closure would make compliance with our state's Global Warming Solutions Act challenging, as it requires that we must achieve greenhouse gas emissions 10% below 1990 levels by 2020 on an economy-wide basis."

Not So Fast

In considering the future of nuclear power in New England, you couldn't get more concise than a recent paper by the Rocky Mountain Institute titled "What the grid needs is a symphony, not a shouting match," Shelk said.

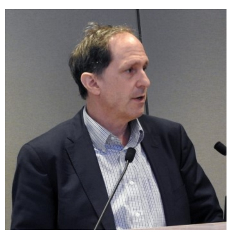
"We are the lead plaintiff contesting the Illinois ZECs," he said. "We're also part of the litigation in New York, and we were working at the state level. ... Why do we care? It's very simple. These proposals single out nuclear, and only nuclear, for substantial state subsidies. It doesn't extinguish the risk that nuclear plants face; it merely shifts it to the rest of us and our customers."

EPSA has been joined in the Illinois litigation by PJM's Independent Market Monitor, who has called ZECs a "contagion" that undermines the markets.

Shelk said that at current PJM prices of about $30/MWh, the Illinois ZECs are worth about $11.50/MWh.

"Those of us that are competing against each other, one set of competitors gets $30, and somebody else gets almost a 50% premium to the market," he said. "And it's unrelated to carbon. If we take steps to switch … from coal to gas or within gas to more efficient gas turbines — which are coming on the market very rapidly — we get zero for that attribute. And as you all know, a ton [of emissions] avoided is a ton avoided. So nuclear and only nuclear power, and only certain plants in PJM and New York, would get that additional price."

Next Generation



Armond Cohen, executive director of the Clean Air Task Force, began his career as a lawyer fighting nuclear power, but he has now come to see the environmental value of nuclear power in improving air quality in New England.

"As you can see in the march towards a zero-carbon grid, nuclear contributes something … quite significant when compared to some of the other options," Cohen said.

All the renewable energy being developed "adds up, but the point is, in scale, it's still a little bit less than the existing nuclear," he said. "And I'm not arguing this as an either/or; quite the contrary. I'm arguing that we should maintain the nuclear base and build on top of it. Over the longer term, the management of a very high weather-dependent system becomes complicated."

Cohen said he has hopes for next-generation nuclear power technology, which promises to reduce costs by using coolants that remain stable at higher temperatures. He estimated costs can be achieved at about $40 to $60/MWh for the new designs.

"Those [new coolants] are things like molten salts to sodium helium and can operate at atmospheric pressure," he said. "That reduces the need for pressurized containment, and that's about two-thirds of the plant's steel and concrete at Seabrook and Millstone. If you don't have to keep water under very high pressure and containment, you vastly reduce the size and complexity of construction. That allows you to go to a factory production model with faster and more predictable completion times."

Several developers in the U.S. have designs of next-generation nuclear power plants "at the paper stage" and foresee operational plants by 2030, Cohen said. He lamented that the U.S. has fallen behind China, which hopes to bring its first such plant online next year.

Restructuring Legalities

Ari Peskoe, senior fellow in electricity law at Harvard Law School, outlined the issues that contributed to the nuclear industry's problems and the legal hurdles ZECs may have to clear.

"Restructuring removed generation from the rate base and severed the state's planning authority, its environmental regulatory authority, from how the plant was actually going to earn its money," Peskoe said. "That's critical, because if at the end of the day the plant can't earn its money, it's not going to get built."

Peskoe summarized three legal claims about ZECs at issue in federal court: That the states are regulating wholesale rates and thus intruding on FERC's exclusive jurisdiction (field pre-emption); that they "stand as an obstacle" to FERC's regulation of just and reasonable rates (conflict pre-emption); and that they favor in-state businesses in violation of the Constitution's dormant Commerce Clause.

Rulings on the ZECs, Peskoe said, could have broader implications. "If ZECs are pre-empted, are [renewable portfolio standards] or the Regional Greenhouse Gas Initiative next?" And if a nuclear PPA is rejected, he asked, will Massachusetts' procurements for hydro and offshore wind be at risk?

NECA Environmental Conference 2017

Trump Brings Uncertainty to ISO-NE, Regulators

By Michael Kuser

MARLBOROUGH, Mass. — Environmental activists and state and RTO officials agreed Thursday that President Trump's rollback of Obama administration energy and climate policies are causing uncertainty for New England officials even as some states attempt to fill the void.

Two panels at the Northeast Energy and Commerce Association Environmental Conference on June 15 discussed the implications of the Trump administration's policies, including proposed EPA budget cuts and two executive orders to reduce regulations and prevent implementation of the Clean Power Plan.

Ad Hoc Decision Making

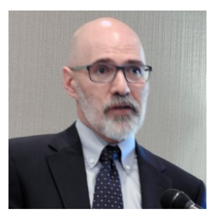
Former EPA Deputy General Counsel **Ethan Shenkman** said Trump's May 28 order — which called for a sweeping re-examination of all U.S. energy and environmental policies to eliminate burdens on domestic energy resources — may result in *ad hoc* decision making (Executive Order 13783). (See *Trump Order Begins Perilous Attempt to Undo Clean Power Plan*.)

In addition to seeking to eliminate the Clean Power Plan, the order also directs the Council on Environmental Quality to rescind its guidance on how federal agencies should consider greenhouse gas emissions and the effects of climate change in National Environmental Policy Act (NEPA) reviews. CEQ coordinates federal environmental efforts and works with agencies and White House offices in the development of environmental policy. NEPA reviews are required for any "major" federal action.

Trump also ordered the elimination of the Interagency Working Group on Social Cost of Greenhouse Gases, created by the Council of Economic Advisers and the Office of Management and Budget in 2009, and dismissed the group's work products as "no longer representative of governmental policy." Instead, Trump ordered that "when monetizing the value of changes in greenhouse gas emissions resulting from regulations," agencies rely on a 2003 Bush-era finding by OMB.

Withdrawing the guidance document means "you're back to a situation of uncertainty and some *ad hoc* decision making as each agency in region by region decides how they're going to address these issues going forward," said Shenkman, a partner with law firm Arnold & Porter Kaye Scholer.

State Funding Worries



ISO-NE environmental and regulatory analyst **Patricio Silva** gave a presentation that highlighted Trump's proposed 31% reduction in EPA's budget for fiscal year 2018, to $5.7 billion from $8.2 billion this year. Silva said the cuts could impact New England states' capacity to enforce environmental regulations. In 2016, Connecticut, Vermont, Massachusetts and Maine relied on EPA for 21 to 24% of their environmental agency budgets, while New Hampshire and Rhode Island saw the federal grants fund 35%.

Roger Reynolds, of Connecticut Fund for the Environment/ Save the Sound, said the proposed 31% reduction would eliminate funding for estuaries and the Great Lakes. "And since we're closely associated with Long Island Sound, that concerned us greatly," he said. "Long Island Sound generates $18 billion annually for the regional economy, and that's on the low end of the estimates."

Noting that his group received $8 million in federal funding in 2017, twice its 2016 outlay, Reynolds said that "it's not entirely clear — in fact, quite the opposite — that Congress is necessarily in lock-step [with Trump], especially on environmental funding."

Silva also pointed out that presidents' proposed cuts don't always survive Congress. For example, President Ronald Reagan proposed 25% to be cut from the EPA budget over two years, and the budget for fiscal 1982 ended up being decreased by 7%, Silva said.

'Rollback Rebound'

"There is a significant amount of uncertainty now facing all segments of the industry when it comes to determining what's going to happen and what are the consequences of the regulatory agenda that the incoming administration has been outlining," Silva said.

After Trump announced his decision to withdraw from the Paris Agreement on climate change June 1, several states, including most of New England, vowed to uphold U.S. commitments to reduce greenhouse gas emissions. Silva said this is evidence of the risk of a "rollback rebound" — a term he credited to D.C.-based consultants ClearView Energy Partners. If states rush to fill

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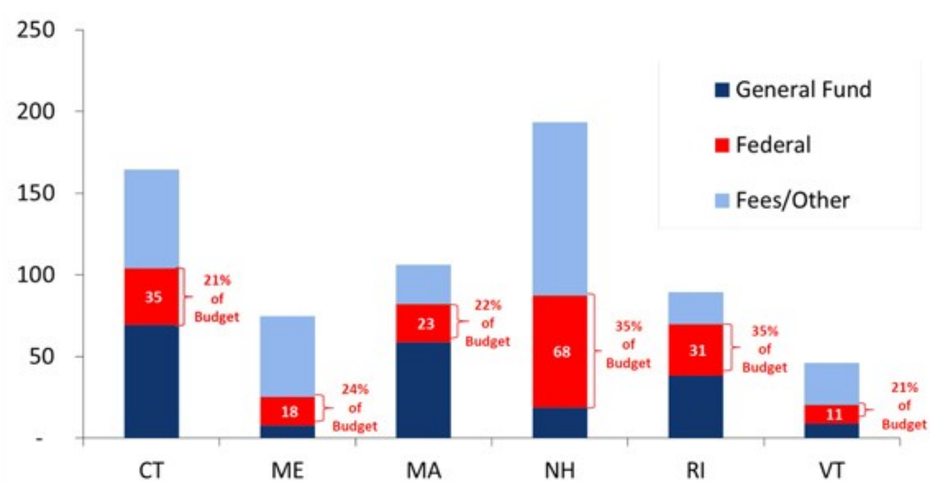


New England state environmental agency FY 2016 budgets ($ millions). New Hampshire budget includes natural resource activities. | *Environmental Council of States, state budget data*

NECA Environmental Conference 2017

Trump Brings Uncertainty to ISO-NE, Regulators

Continued from page 9

the vacuum left by the Trump administration, Silva said, they could create a patchwork of regulatory policies that further complicate business for energy developers. (See Trump Pulling U.S. Out of Paris Climate Accord.)

"We have no idea what's going to happen with the high-priority infrastructure initiative that the administration's put out," said Silva. "Again, with the absence of any staff at CEQ to implement these programs and also ... the withdrawal of policy guidance on how greenhouse gas is accounted for... we now run the risk that if a new transmission project is developed here in the region, it could be facing different greenhouse gas standard assessments by FERC, Fish and Wildlife [Service] and Army Corps of Engineers. And then CEQ would be stuck trying to reconcile all those different approaches."

Lack of staff could jeopardize permitting and oversight not only for new transmission, but also for generators, pipelines, fuel storage and port projects, he said.

Silva repeated a comment by lobbyist and former Trump transition official Michael McKenna, president of MWR Strategies, who said "personnel is policy."

"At 120 days in, we have any number of federal departments and other entities that affect energy policy across the country that have significant vacancies," Silva said. "[At] EPA, only two out of 13 senior staff positions [have been] either nominated or confirmed."

FERC's loss of its quorum in February is "a source of particular anxiety, since they regulate us," Silva said. "There are many ISO/RTOs that have more pressing matters that have been delayed by the lack of the quorum." A Senate panel on June 6 cleared nominees Neil Chatterjee and Robert Powelson for a vote by the full Senate. (See LaFleur Ready to Welcome New Members as FERC Backlog Grows.)

FERC will be controlled 3-2 by Republicans once all the vacancies are filled, raising the chance of a change in ideology. For now, a lack of clear policy from the commission on the treatment of nuclear resources and integrating markets and public policy "could complicate a variety of both state initiatives, but more importantly from our perspective, it complicates and makes planning much more difficult," Silva said.

Freeze on Rulemaking

Executive Order 13771, issued Jan. 30, calls for federal agencies to rescind two regulations for every one promulgated, making it perhaps the most significant of Trump's orders, said Seth Jaffe of law firm Foley Hoag. "It's not about regulatory budgeting or anything; it's about a freeze on significant regulations," said Jaffe, who moderated a panel on regulatory changes at the end of the day and also participated with his own presentation.

The March order also could be significant because it is not only about getting rid of the CPP, but also rescinding all the Obama administration executive orders and guidance on climate issues, Jaffe said. "Top to bottom, wipe the slate clean on everything Obama did on climate and federal [policy]."

Jaffe said Trump picked a good point of attack on the CPP, which some experts say may have exceeded EPA's authority by seeking to impose regulations beyond generators' "fence line."

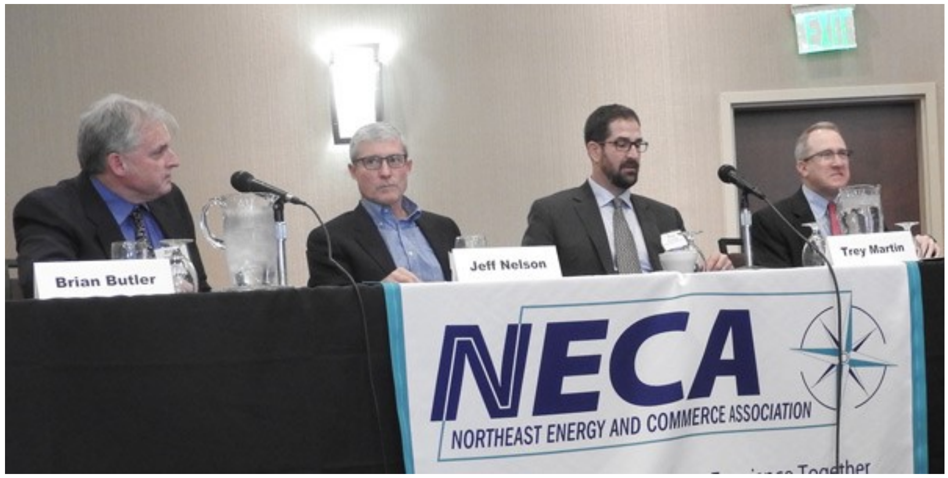
"The Trump administration [could] say 'We're not going to get rid of the endangerment finding. We're still going to regulate greenhouse gases from power plants where we have jurisdiction, but what we're going to do is just regulate greenhouse gases from those power plants, rather than somehow pretend that what we're regulating is emissions from power plants when what we're really doing is incentivizing renewable energy.'"

While that is a sound legal argument, Jaffe said, the Trump administration may risk losing the deference usually shown by the courts to the executive branch if it ignores climate science and fails to provide a rational basis for its reversal of Obama policies.

NECA Environmental Conference 2017

Experts Provide Tips on Navigating Pipeline, Tx Permitting in New England

By Michael Kuser



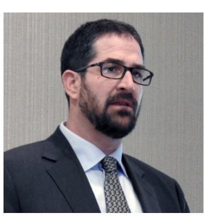
Left to right: Butler, Nelson, Martin and Burack. | *© RTO Insider*

MARLBOROUGH, Mass. — It's not just "look before you leap." For those considering crawling through the maze of regulations and property laws that determine whether a pipeline or electric transmission project can win all the permits needed to start construction, it requires looking dozens of steps ahead.

"An iterative process is crucial," **Thomas Burack**, former commissioner of the New Hampshire Department of Environmental Services, told participants of the Northeast Energy and Commerce Association Environmental Conference on June 15.

"Underlying the environmental regulations, the state and federal permit processes, are property laws ... that have interplay with the environmental laws," said Burack, now with law firm Sheehan Phinney Bass & Green. "They regulate what we can do on the land, in the surface water and the groundwater... they're all interconnected from a technical and regulatory standpoint. You really need to have an integrated and coordinated approach if you're working in this arena."

Buying Goodwill



Planners should consider property law rights from the very beginning of the design process, which may come into play in even getting access to an area to assess its potential for a project, said **Trey Martin** of Downs Rachlin Martin, who gave a presentation on stormwater aspects in linear transmission project planning, construction, operation and maintenance.

Each New England state has a program that either implements federal law — in Massachusetts and New Hampshire it's EPA issuing stormwater permits — or its own stormwater requirements, according to Martin.

"While you have to figure out what steps you can make and when you can start each one to reach your milestones, it's also important to think about context," he said. "In Vermont, a context for stormwater to keep in mind is that most of the state is subject to TMDLs [total maximum discharge loads] for impairment to major watersheds."

As an example, he showed a photo of an algae bloom on Lake Champlain, the result of phosphorous from fertilizer and other pollutants running off farmland and roads.

"The cost to do the cleanup that the state and EPA have set in motion is at least in the tens of millions per year over 20 to 25 years," Martin said.

The New England Clean Power Link, a transmission line planned by Transmission Developers Inc.-New England (TDI-NE) under Lake Champlain, had special challenges because the lake is a public trust resource under Vermont law. Water and land held subject to the public trust may only be used for purposes approved by the legislature as public uses.

The line was designed to run across the bottom of the lake, make land and carry power out of Vermont to southern New England. "So no off-takers in Vermont," Martin said. "What's the public good for Vermonters? In order to really expedite the permitting, this company made 'public good' payments into a clean water fund for Lake Champlain restoration. Obviously it was not the only factor in a really good project that got permitted completely, but it was a major factor. It really bought a lot of goodwill both with regulators and with the municipalities struggling with these questions." (See Energy Department OKs Canadian Hydro Line in New England.)

Avoiding Resource Impacts and Protesters

Jeff Nelson, director of energy and environmental services for VHB, gave a presentation on how to handle wetlands concerns and overcome protests during the permitting process. VHB worked on a 41-mile natural gas pipeline extension for Vermont Gas that was proposed in 2012, fully permitted in 2014 and went into operation in April 2017.

Vermont Gas is licensed to serve the whole state but now serves mainly the northwestern part of Vermont with gas piped from Canada. "The project involved negotiations with some 220 landowners, is regulated by the Vermont Public Service Board as well as the state Agency of Natural Resources, and impacts waters and wetlands regulated by the Army Corps of Engineers," Nelson said.

A key part of the final design was avoiding resource impacts, most significantly by choosing to use horizontal drilling, he said. The longest section of such drilling was just 3,000 feet under Monkton Swamp. "No surface impact, no change to the vegetation or the hydrology was something that the regulators frankly insisted on," Nelson said.

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NECA Environmental Conference 2017

Experts Provide Tips on Navigating Pipeline, Tx Permitting in New England

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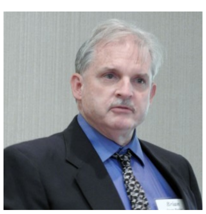
Addison natural gas project construction | *VHB*

After avoiding as much resource impact as they could, the planners minimized impact by co-locating 20 miles of the pipeline along a Vermont Electric Power Co. high-voltage transmission line. "That took advantage of an existing cleared corridor [and] minimized the amount of new forest clearing … minimizing the amount of overt disturbance," Nelson said. The planners co-located an additional 10 miles of the pipeline along a highway, so three-quarters of the project was sited along existing corridors.

After the routing, the construction phase involved mapping every element and sensitivity, using timber mats to protect the ground, creating sediment traps to keep dirty water from running off, and even separating topsoil from the subsoil and replacing them in the right order for full habitat restoration.

Despite the care taken to avoid impact, many "loud voices" opposed the pipeline, Nelson said. "It was a challenging project from that standpoint because lots of people had varying opinions on how things should happen. I think the newspaper [lead] pretty much sums up the whole thing: '41-mile Vermont Gas pipeline extension into Addison County is finished ... after three years, $165 million and countless protests.'"

Smorgasbord of Species



Brian Butler, president of Oxbow Associates, who called himself the "bugs and bunny guy," presented on the "smorgasbord of species that are regulated in the Northeast region under one or another statute. With rare and endangered or threatened species, we have a couple tiers of regulation that are applicable to linear projects."

The federal Endangered Species Act of 1973 serves as the umbrella. But once away from the whales and the migratory seabirds along the shore, federal law specifically protects only a small number of inland species in New England, according to Butler.

"Those are mostly freshwater mussels," Butler said. "Those are the things most likely to be encountered in a pipeline or a linear kind of project where you're crossing high quality streams." Bats and bog turtles also pop up at moderate frequencies, he said in an email following the conference. "The adoption of the Final 4(d) rule with regard to long-eared bats by USFWS [Fish and Wildlife Service] reduced the survey and avoidance burdens inherent in the precedent, interim ruling," he said.

In New England states, a pipeline is more likely to encounter the more numerous state-listed species, and the state codes are administered by bodies that deal with fisheries and wildlife. "As the federal money might be withdrawn from some of these agencies [because of President Trump's proposed budget cuts], both federal and state agencies, you might anticipate a diminution of staff and a demoralization of the remaining staff, and it may confound these processes ... the approvals that we're discussing right now," Butler said.

In planning for permitting, it's useful to anticipate the seasonality of certain rare plants, some of which may only be visible or growing for three weeks or a month. "So if you're sitting on your hands and then decide 'we need to make a survey for that plant,' you may conceivably have to wait for 10 months to clearly identify it. You always want to be trying to think ahead. The only invariant that comes in these projects is the variability that comes in the first several months or year of locating the project as well as anticipating the timing."

CAISO NEWS

CAISO Proposes Consolidated EIM Changes

By Jason Fordney

CAISO is kicking off an initiative that will consolidate proposed changes to the Western Energy Imbalance Market (EIM), including allowing third-party transmission providers to receive congestion revenue when they make capacity available between EIM balancing authority areas.

Stakeholders will discuss the proposals in a call later this month, and the changes will be submitted to the EIM Governing Body in October and the CAISO Board of Governors in November.

"The ISO is committed to providing ample opportunity for stakeholder input into our market design, policy development and implementation activities," CAISO said in a June 13 issue paper that outlines the new proposals.

The initiative contains two other proposals in addition to the third-party transmission measure, including one that addresses monetary charges related to bilateral market schedule changes and another that provides for more equitable sharing of benefits when an EIM transfer wheels through an EIM balancing authority area.

Stakeholder Comments Due	June 30, 2017
Post Straw Proposal	July 27, 2017
Stakeholder Meeting	August 3, 2017
Stakeholder Comments Due	August 15, 2017
Post Draft Final Proposal	August 29, 2017
Stakeholder Conference Call	September 5, 2017
Stakeholder Comments Due	September 12, 2017
EIM Governing Body Meeting	October 10, 2017
Board of Governors Meeting	November 1 – 2, 2017

Schedule for consolidated EIM initiatives stakeholder process | *CAISO*

CAISO said the proposal to allow third-party transmission owners to make available unused capacity for use in EIM markets would benefit market participants by increasing transfer capacity, while the transmission provider would receive congestion revenue. EIM entities can currently collect congestion revenue through an offset, but that functionality is not extended to third parties.

The ISO is also investigating whether it can use its current wheeling function to manage bilateral schedule changes originating within or moving across the EIM footprint. Under current practice, schedule changes made after hourly base schedules are submitted are exposed to real-time imbalance settlement payments that are not known ahead of time.

"This will allow market participants with potential bilateral transactions to express a bid price at which the balanced source/sink pair would result in a schedule change," CAISO said.

Additionally, CAISO said it wants to explore whether balancing authority areas through which power is wheeled should share in benefits when energy transfers occur. EIM energy transfers through balancing areas are exempt from wheeling charges, and the market rule changes would allow the source,

Transmission lines near Joshua Tree State Park | *© RTO Insider*

wheel-through and sink balancing areas to share in revenue recovery.

"In this case, analysis would need to be completed to determine the magnitude of net wheeling across the [balancing authority] and the cost associated with the wheeling that is not covered by the existing congestion rent settlement," CAISO said. "This will likely vary per each EIM entity."

Stakeholders will discuss the proposals in a call today, with comments due on June 30 and a straw proposal to be posted July 27. More meetings are scheduled for August and September, with the board due to review a proposal in early November.

The CAISO-run EIM is designed to better balance supply and demand across the West by making more electricity resources available in real time. The EIM began operating in November 2014 and now includes participants in Arizona, California, Idaho, Nevada, Oregon, Utah, Washington and Wyoming.

In the past month, Powerex and the Los Angeles Department of Water and Power became the latest entities to sign agreements to join the market. (See *Powerex Slated to Become First Non-US EIM Member*; and *Los Angeles Dept. of Water & Power Signs Pact to Join EIM*.)

California Heat Wave Prompts CAISO Flex Alert

CAISO on Monday called on consumers to voluntarily conserve energy this week as scorching heat drove up electricity usage and caused outages in Pacific Gas and Electric's service territory.

The ISO issued a "flex alert" effective 2 to 9 p.m. on Tuesday and Wednesday, with peak load expected to break 47,000 MW both days in the face of triple-digit temperatures. The alerts are issued when the grid is "under stress" from generation or transmission outages, or persistently high temperatures, the ISO said.

This week's expected peaks would be more than 90% of CAISO's all-time peak demand of 50,270 MW, set on July 24, 2006.

By late Monday, the ISO forecast that the day's peak demand would hit about 44,600 MW, well short of an earlier forecast of 46,500 MW. Temperatures soared up to 110 degrees in California's interior, the most intense heat wave to hit the state since the summer of 2013. Multiple days of extreme heat are stressing equipment and causing some outages. PG&E still had 4,200 customers without power as of Monday morning, with about 189,000 customers initially affected.

"This is a heat wave, and we have got all our generation that we can make available made available to us," CAISO spokesman Steven Greenlee said during a media call held jointly with PG&E.

An extended period of very hot weather is expected across the interior portions of southwest California through the middle of the week, and temperatures could reach 112 degrees in parts of the state, the National Weather Service said as it issued a heat advisory.

— Jason Fordney

CAISO NEWS

WECC Generation, Tx Loss Events Spike

By Jason Fordney

Electric system disturbances resulting from the loss of generation or transmission in the U.S portion of the Western Interconnection increased by 50% between 2015 and 2016, according to a new report from the Western Electricity Coordinating Council.

There were 24 "loss of generation or transmission" events in 2016 compared with 16 in 2015, WECC said in its State of the Interconnection report. The category refers to the loss of three or more Bulk Electric System facilities from a common cause, or the loss of 2,000 MW or more of generation.

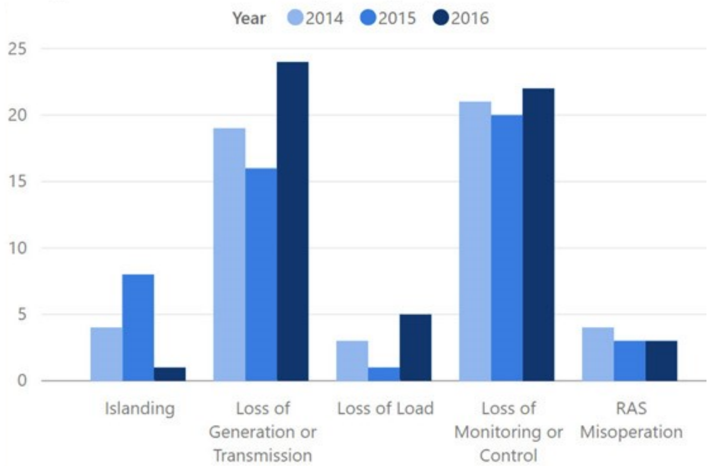
WECC did not provide detail on the reason for the increase and did not immediately respond to a request for more information.

Loss-of-load events in the interconnection also increased between 2015 and 2016, from one event to five. These events are defined as loss of firm load for 15 minutes or more exceeding 300 MW for entities with demand of 3,000 MW or greater in the previous year, or exceeding 200 MW for all other entities. There were three loss-of-load events in 2014.

The largest loss of load occurred Aug. 7, with the loss of 665 MW, about 0.5% of the day's peak system demand of about 127,000 MW.

Not all bulk power system disturbances qualify as loss-of-load events, and "relatively few meet the criteria," WECC said.

Noting the increase, WECC said that "more years of data will be necessary to determine whether this signifies an increasing trend and potential concern, a statistical anomaly or normal variation between years."



Reportable disturbances by category in U.S. portion of WECC | *WECC*

"Loss of monitoring or control" events — those lasting 30 minutes or more that affect an entity's ability to make operational decisions — also increased in the Western Interconnection last year. There were 20 such events in 2015 and 22 in 2016.

Islanding events — unintentional system separation resulting in an electrical island of 100 MW or more — dropped from eight in 2015 to just one in 2016.

Incidents in which a remedial action scheme failed or was enacted unnecessarily dropped from four in 2014 to three in 2015 and 2016.

The Western Interconnection housed a combined nameplate generation capacity of 267,000 MW in 2016, up 1% from the previous year. Natural gas-fired generation represented the largest share (40%), followed by hydroelectric (27%), coal (14%) and wind (8%), with the balance coming from solar, geothermal, nuclear and "other" utility-scale generation.

In 2016, "retirement of coal and steam turbine gas units led to slight decreases in capacity from these fuel types, while the installed capacity of utility-scale solar increased by over 6,000 MW," WECC said. There is about 14,350 MW of solar in the interconnection, or about 5% of capacity.

Hydro dominates in the Northwest, while California and the Southwest are heavy with natural gas. Solar capacity is growing in California, and wind capacity is increasing in the Rocky Mountains and along the Columbia River.

WECC is the regional entity responsible for compliance monitoring and enforcement in the Western Interconnection, which spreads west from the Rocky Mountains to California, north into western Canada and south to Mexico's Baja California Peninsula. It consists of 37 balancing authorities and is one of four major interconnections across North America. The WECC report covers the bulk power system, which does not include local electric distribution systems.

The WECC Board of Directors is due to receive an update regarding the State of the Interconnection report at its June 21 meeting in Salt Lake City.

CAISO NEWS

CAISO Finalizes Rules for Demand Response, Distributed Generation

Continued from page 1

from the policies and their influence on generation resources and grid operations, the ISO said in a draft final proposal on "Energy Storage and Distributed Energy Resources (ESDER) Phase 2."

"The ISO will continue collaborating with stakeholders on the remaining ESDER 2 topics in a phased policy approach that is appropriate in a rapidly evolving market environment that currently does not have a clear end state," CAISO said.

The board next month will review finalized proposals for alternative baselines, distinguishing between charging power and station power for energy storage resources, and changes to the threshold price for DR, among others.

For DR, a baseline analysis working group developed enhancements to the method whereby proxy DR resources are evaluated. The ISO has finalized the alternative baselines, which are designed to improve the accuracy of DR performance calculations. CAISO said there has been "overwhelming" support for the alternative baseline proposal.

The ISO currently relies on a "10-in-10" baseline methodology that works well for many large commercial and industrial customers but not for all customer types, leading to the development of a new approach.

Using the 10-in-10 methodology, the ISO calculates a baseline by examining the 45 days prior to a trade date and finding 10 "like" days in which no DR was required. It then uses hourly average meter data to create a baseline representing a typical load profile, and the resource is paid for reducing usage below the baseline.

Under the new proposal, baselines for residential resources would be based on a four-day weather match that estimates what electricity use would have been in the absence of DR dispatch under similar weather and on similar days, using a control group of similar users.

Commercial baselines would be based on the 10-in-10 method with a 20% adjustment cap, an average of the previous five days and a control group. Baselines are adjusted using actual load data in the hours preceding a DR event to better reflect variables that might not appear in the historical data.

The stakeholder process showed that station power is a retail issue, CAISO said, and listing specific functions for wholesale and retail functions is not the best approach.

"The CAISO believes that it is prudent to simplify the definition of station power to energy for operating the electrical equipment of an energy resource subject to a retail tariff, as defined by the local regulatory authority," CAISO said. This definition would be consistent across regulatory authorities and avoid conflicts if the California Public Utilities Commission changed its definition of station power.

The ISO is also proposing to expand the list of gas price indices available for use in the calculation of DR benefits. This allows the DR "net benefits test" to recognize Energy Imbalance Market (EIM) entities outside of the state that want to participate as DR in the CAISO market.

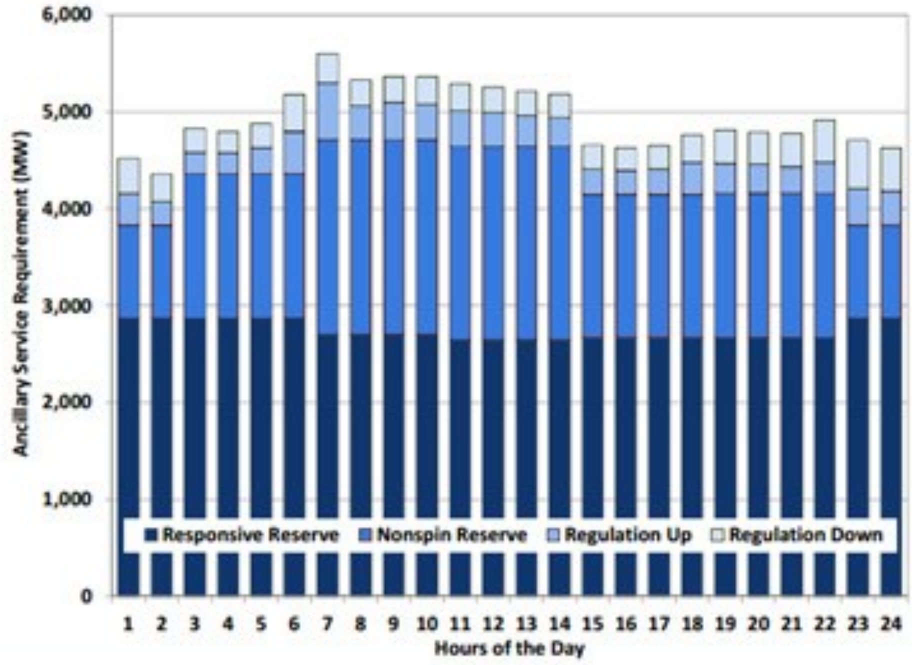
The policy issues discovered in the process will affect the EIM if DR or distributed energy resources are used. The EIM Governing Body will review the proposal on July 13 in its advisory role.

ERCOT NEWS

ERCOT Monitor: Optimizing Energy, Ancillary Services Top Priority

By Tom Kleckner

AUSTIN, Texas — Potomac Economics' David Patton told ERCOT's Board of Directors last week that while the ISO's market performed "competitively" in 2016, there's still room for improvement.



Yearly average ancillary service capacity by hour | *Potomac Economics*

Delivering an overview of his firm's recent State of the Market report for the Texas grid operator, Patton said more efficiencies would be gained by improving the market's price formation and, more important, real-time co-optimization of energy and ancillary services. Potomac Economics, ERCOT's Independent Market Monitor, filed its most recent market report with the Public Utility Commission of Texas in May. (See "IMM Offers Additional Suggestions to Improve Markets," *ERCOT Briefs*.)

"Co-optimization is our highest priority recommendation," Patton said, noting that he has been making that same recommendation since ERCOT's nodal market was developed last decade.

"Co-optimizing energy and ancillary services is one thing you can do to lower costs the most, and to ensure efficient pricing in real time," he continued. "More importantly, co-optimization allows for efficient shortage pricing. With sustained shortages, there's going to be a lot of revenue generated and lots of costs generated. Having a system where you are confident the use of resources has been maximized and the dispatch has been optimized, the shortages you're pricing are real shortages, not an artifact of some dysfunction where you can't get all the ramping capability of all your resources efficiently."

David Patton | © *RTO Insider*

Patton called real-time co-optimization a "more elegant process" than ERCOT's current practice of "producing adders to try and mimic what a co-optimized system would do." He said jointly optimizing the energy and reserve markets would allow shortage pricing under the operating reserve demand curve (ORDC) — which sets real-time energy prices reflecting the expected value of lost load — to be more accurate. The real-time market would determine every five minutes whether a shortage of either energy or reserves exists and set prices accordingly. Currently, capacity providing responsive or regulating reserves are not available to be converted into energy.

"Instead of producing an adder, you are allocating megawatts between products to manage constraints and satisfy load and reserve requirements," he said. "When the system runs out of resources and can't manage the reserve requirements, the marginal cost of the last megawatt of reserves you can't satisfy will set the ancillary service price and be embedded in the energy price. If you're in a transmission shortage and you've ramped what you can ramp, but you can't get the flow beneath the limit, it will optimally establish congestion prices that reflect that transmission shortage."

A co-optimized market would benefit ERCOT's smaller qualified scheduling entities (QSEs) when they are allocated ancillary services, Patton said. QSEs with large portfolios can move reserves between generating units at lower costs, he noted.

"Co-optimization, with that full information in an optimal fashion throughout all of ERCOT … would allow the ancillary services to be optimized, because shortages of ancillary services set our shortage pricing," he said. "Having confidence that's done efficiently is important."

ERCOT's Wholesale Market Subcommittee has already taken up the co-optimization issue, which has also drawn attention at the PUC. (See *Texas PUC Wary of Using ERS to Avoid Local Blackouts*.)

The PUC has created a project to "assess price-formation rules in ERCOT's energy-only market" (Docket 47199) and is planning a workshop for further discussion. The ISO is working on a report to be filed with the commission by July 14.

"We will be engaged in that with everyone else," promised ERCOT CEO Bill Magness.

ERCOT News

Board of Directors Briefs

LP&L Study: Production Costs Increase

AUSTIN, Texas — Jeff Billo, ERCOT's senior manager of transmission planning, told the Board of Directors last week that further analysis indicates Lubbock Power & Light's potential transition from SPP could result in as much as $77 million in increased production costs — an $11 million jump from the preliminary results presented in May to the Technical Advisory Committee. (See *Lubbock Load Could Boost ERCOT Production Costs by $66M*.)

The increase did not go unnoticed by Director Carolyn Shellman, of San Antonio's CPS Energy.

"So, you caught me on that," Billo joked, when questioned about the difference. He explained the increase was caused by the addition of a third synchronous condenser to a previously approved project, designed to reduce wind energy congestion in the Texas Panhandle.

"Once we added a third [condenser], we didn't see quite as much [economic] benefit from a wind-congestion relief perspective," Billo said.

Staff's evaluation indicates an increase of $77 million in fuel costs to serve the additional load in 2020 and $74 million in 2025. The preliminary numbers were $66 million and $60 million, respectively.

Payments from LP&L (LMP times Load (MW))		
Year	LP&L Load Included in the West Load Zone	LP&L Load Included in an LP&L Load Zone
2020	$ 78 million	$ 76 million
2025	$ 99 million	$ 99 million

Impact on non-LP&L ERCOT Consumers (Load-weighted Average Annual LMP)		
Year	Without LP&L	With LP&L
2020	$35.25/MWh	$35.28/MWh
2025	$44.61/MWh	$44.66/MWh

Lubbock Power & Light impact on ERCOT consumers | *ERCOT*

Should LP&L's load be integrated into ERCOT, it will be placed in either the ISO's West zone or its own zone. Analysis indicates non-LP&L consumers would see an increase of 3 to 5 cents/MWh in the years 2020 and 2025 to pay for serving Lubbock's load.

Billo reminded the board that the increased production costs will be offset by additional wind energy flowing into the ERCOT market through the LP&L interconnection.

"The Lubbock Power & Light facilities create a new transfer path for wind energy out of Panhandle," he said. "[The facilities] connect to wind resources where we're seeing a lot of congestion."

LP&L announced in 2015 it planned to disconnect 430 MW of its load from SPP and join ERCOT in June 2019. The Public Utility Commission of Texas last summer asked the grid operators to conduct coordinated studies on the move, focused on a cost-benefit analysis for ratepayers. (See *PUCT Asks ERCOT, SPP to Coordinate on Lubbock P&L Move*.)

ERCOT plans to file its study with the PUC by the end of June (Docket 45633). SPP has said it intends to file its study results with the commission in late June.

'Healthy Margins' Headed into Summer Months

ERCOT CEO Bill Magness said "healthy" reserve margins "well above our targets" have the grid in good shape to meet increased demand this summer. The ISO's latest Capacity, Demand and Reserves report indicated reserve margins of 16.8 to 18.9% in the next five years. (See *ERCOT Sees Enough Generation Through 2022, 73-GW Peak for Summer*.)

ERCOT set demand records in both April and May, recording 59.2 GW on May 26 for its latest monthly high. The ISO has set new

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ERCOT Board Approves West Texas Tx Project

By Tom Kleckner

AUSTIN, Texas — ERCOT's Board of Directors last week approved the Far West Texas transmission project, which will result in the construction of two 345-kV lines southwest of Odessa, Texas.

The project would have received unanimous approval but for the abstention of American Electric Power, which will build the project, along with Oncor and Lower Colorado River Authority Transmission. The ISO's Technical Advisory Committee unanimously approved the project in May. (See "Far West Texas Project Gets TAC's OK," *ERCOT Technical Advisory Committee Briefs*.)

The $336 million project is designed to address the region's continued load growth, which has averaged 8% since 2010. Increased oil and natural gas exploration in the Permian Basin and a jump in generation projects — mostly solar — are behind the numbers. ERCOT said peak electricity demand in the area has jumped from 22 MW in 2010 to more than 200 MW in 2016 and is projected to exceed 500 MW by 2021.

Billo

"We continue to see a tremendous amount of load growth in West Texas," said Jeff Billo, ERCOT's senior manager of transmission planning.

One 85-mile line would run between the Riverton and Moss switching stations, with a second circuit added to the existing 16-mile 345-kV line between Moss and the Odessa line. A second 68-mile 345-kV line will connect the Solstice and Bakersfield substations.

The project is expected to be completed within five years, pending approval from the Public Utility Commission of Texas.

Oncor and AEP initially proposed the project to ERCOT's Regional Planning Group in April 2016. Staff reviewed 40 different alternatives and lowered the cost to $336 million after settling on the most cost-effective of four options: two separate double-circuit 345-kV lines — each with one circuit in place, substation expansions and other transmission elements. ERCOT concluded the upgrades "meet the reliability criteria in the most cost-effective manner and have multiple expansion paths to accommodate future load growth."

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ERCOT Board Vice Chair Judy Walsh (left) speaks at last week's board meeting in Austin as, to her left, Chair Craven Crowell and CEO Bill Magness listen. | © *RTO Insider*

demand highs for seven of the 12 calendar months during 2016-17.

"Continuing growth on the system is pretty much evidenced by that fact," Magness said.

Woodfin

Dan Woodfin, ERCOT's senior director of system operations, said the ISO has sufficient resources (81.9 GW) available and doesn't expect the Houston and Rio Grande Valley areas to be the "significant issues" they have been in recent years. He said transmission limitations may create congestion for exports from the Panhandle and imports into Houston.

Chris Coleman, the ISO's meteorologist, said he doesn't expect above-average temperatures in Texas this summer, despite the warmest winter on record. He shared data with the board that showed little correlation between warm winters and warm summers, and said it's "highly unlikely" temperatures will reach the record-breaking levels of 2011.

"The main reason I won't forecast a repeat of 2011 is because it's wetter. Quite a bit wetter," Coleman said, pointing to drought-breaking rains over the last few years that have raised reservoir capacity from 75.5% full to 87.2% in the last year. "We have 1.2 trillion gallons of water more than we did in the reservoirs in 2011."

But Coleman told directors that Texas is long overdue for a hurricane's landfall. The last storm to hit the state was Hurricane Ike, which devastated Southeast Texas in 2008. Another year without a hurricane's landfall would equal the longest such span since 1900.

"We're way overdue," he said. "Statistically, we average one storm every 2.5 years."

Coleman is forecasting 14 named storms and seven hurricanes, including four major storms. He is projecting three or four named storms in the Gulf of Mexico, where water temperatures never dropped below 73 degrees this winter.

"There's a very strong correlation between a warmer-than-normal Gulf of Mexico and extreme weather," Coleman said. He said there is a disturbance in the gulf over the Yucatan Peninsula and Bay of Campeche that could develop into a named storm (Bret) later this week, a forecast backed up by the National Hurricane Center.

Coleman has also been developing medium-range (eight to 14 days) and long-range wind forecasts (one to three months), work that's still in progress. He said above-normal temperatures lead to windy conditions, and he expects a "windy" summer.

Board Vice Chair Judy Walsh asked Coleman whether he would begin to do wind forecasts that could provide meaningful data.

"That's my plan," Coleman said. "I just wrapped up this study, and I'll try to apply it for the rest of the summer."

Magness Unfazed by Lagging Admin Fees

Despite a $2.3 million negative variance in budgeted system administration fees, ERCOT still has favorable net revenues of $1.3 million — and little reason to worry, Magness said.

"Thinking about revenues in ERCOT in the springtime is sort of like Joaquin Andujar," he said, referencing the late Major League Baseball pitcher. "Joaquin Andujar once said, 'I can sum up the game of baseball in one word: you never know.'"

Magness noted that a year ago, revenues were down $2.2 million, yet the ISO ended up with a favorable variance. ERCOT is on track to finish 2017 with a $2.6 million favorable variance in net revenues.

"It's all about managing to what we have," he said. "We think we will come much closer to the forecast."

Directors Approve 2018-19 Budgets, Keep Admin Fee Flat

The board unanimously approved ERCOT's 2018-19 biennial budget, which includes $222.3 million and $228.0 million for operating expenses, projects and debt-service obligations for 2018 and 2019, respectively. The ISO is currently operating under a $223.1 million budget.

The 2018-19 budget keeps the system administration fee flat at 55.5 cents/MWh. It was raised from 46.5 cents/MWh with the current budget, approved in 2015.

Walsh, who chairs the Finance and Audit Committee, said projections through 2023 show load growing at almost 2% and labor costs escalating at 4% annually. She said committee members asked ERCOT staff to come back in August with analysis on how to keep from raising the admin fee.

"As we look out further in time ... and if these assumptions prove true, we're going to have to balance the levers we have," Walsh said, referencing FTR revenues,

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credit revolvers and the admin fee. "We want to explore how each of those moving parts work, so we're fully apprised of what our choices will be, should we continue to have higher growth in expenses than load," she said.

After 4 Years, NPRR Gets Unanimous Approval

Nodal protocol revision request (NPRR) 562, four years in the making, was among 10 changes unanimously approved by the board.

"This was a very challenging issue," Magness said. "You notice the NPRR started with a five. Everything else [on the agenda] started with an eight."

NPRR562 creates new requirements for identifying and protecting against subsynchronous resonance (SSR) and clarifies responsibilities for affected entities. The ERCOT system has become more vulnerable to SSR with the introduction of series capacitors for voltage support. Without proper mitigation, SSR can quickly destroy resonating elements and resources, and lead to cascading outages.

"We built a grid that delivers power at 60 Hz," said Woody Rickerson, ERCOT's vice president of grid planning and operations. "That's the synchronous heartbeat of the grid."

Rickerson said series capacitors increase the risk of energy being exchanged at a frequency of less than 60 Hz.

The board also approved related changes to the Planning Guide, PGRR056, which accounts for potential SSR vulnerability in the transmission planning process, providing references and citations to the appropriate protocol sections related to SSR, and removing its definition from the guides.

Magness brought Fred Huang, manager of dynamic studies, before the board for special recognition, calling him instrumental in guiding NPRR562 through the PUC's rulemaking process.

"[Huang] always ends up in the middle of something really hard and thorny we have to solve," Magness said.

NPRR831, the only revision request to receive a separate vote, relates to private-use networks (PUNs) — networks connected to the ERCOT grid that contain load typically netted with internal generation and not directly metered by the ISO. The change updates market systems to calculate a net load value for each PUN that will be included in the load zone price for all markets, when the load is a net consumer from the grid.

Source Power & Gas' John Werner encouraged ERCOT to find a short-term solution before NPRR831 goes into effect in October, saying revenue neutrality allocation has reached $50 million this year, five times the amount for the same period last year. The increase is a result of largely PUN loads creating point-to-point obligation payments without offsetting energy imbalance charges.

The consent agenda included five other NPRRs and two additional PGRRs:

- NPRR796: An administrative revision specifying that character set validations are available within each Texas standard electronic transaction implementation guide.
- NPRR820: Aligns the definition of an aggregate generation resource (AGR) with the Protocols, which allow a resource entity to register several generators as an AGR. Intermittent resources are not included.
- NPRR824: Aligns Protocol language with NERC reliability standards for energy emergency alerts and real power balancing control performance.
- NPRR827: Bars ERCOT from awarding point-to-point obligations in the day-ahead market when the corresponding clearing price is greater than the bid price for the PTP obligation by 25 cents/MWh or more. ERCOT said the change will prevent harm to market participants over "modeling issues that need to be resolved and any resolution will take many months to implement." The ISO said the language change will not need to be reversed once the modeling issue is addressed because "any resolution of this issue must honor the fact the PTP obligation bid price reflects the maximum willingness to pay by the bidder."
- NPRR830: Revises the basis of ERCOT's calculation of the four-coincident peak calculation (4-CP) to be consistent with NERC's net-energy-for-load methodology. The proposed methodology uses metered net DC tie flows.
- PGRR057: Aligns the Planning Guides with NERC Standard TPL-007-1 (Transmission System Planned Performance for Geomagnetic Disturbance Events) by identifying responsibilities for performing geomagnetic disturbance vulnerability assessments.
- PGRR058: Clarifies specific generation to be included in the Planning Guide and the applicability requirements for proposed generation that must submit generation interconnection or change requests.

— Tom Kleckner

ERCOT CEO Bill Magness updates the Board of Directors on summer expectations. | © *RTO Insider*

ERCOT News

ETT Updates ERCOT Stakeholders on Extended 345-kV Outages

By Tom Kleckner

Electric Transmission Texas told ERCOT market participants last week that it is working closely with the ISO to minimize the economic effects of an 18-month project to repair cracks on metal transmission structures that will result in extended transmission outages through November 2018.

ETT, a joint venture between subsidiaries of American Electric Power and Berkshire Hathaway Energy, is currently inspecting transmission facilities on seven different 345-kV lines in Northwest Texas. The lines were all built as part of the Competitive Renewable Energy Zones (CREZ) project, which resulted in 3,600 miles of transmission to carry West Texas and Panhandle wind energy east to urban load centers. The project was completed in 2013 at a cost of $6.9 billion.

The transmission company notified market participants in May that it would be taking the CREZ lines out of service to inspect and, if necessary, replace structural components as part of a warranty claim. ETT said the work would involve visual and ultrasonic inspection of 2,743 structures, 21,944 arms, and 2,192 flanges and baseplates.

"Our contractors and suppliers are committed to completing things and not just doing the work to go home," ETT President Kip Fox told market participants during a June 15 web conference. "We're very confident we're pursuing a solution that limits our costs to ratepayers, supports long-term reliability, improves safety and reduces the risk of unplanned outages."

Fox and ERCOT staff both answered questions from market participants, many of them wind farm owners and developers.

In response to a written question about whether wind farms would be taken offline by the maintenance work, staff said its "current understanding" of the outage does not indicate that any generation resources will be "islanded" from ERCOT's grid. The ISO expects some market participants will encounter congestion caused by the work, but it has not performed any specific resource analysis.

The Texas grid operator said it will schedule a second web conference to discuss an alternative ordering of the outages and address concerns about their effects on production costs.

Fox said ETT decided to address the structural issues now, "rather than the next 70-some-odd years."

The company said it first discovered cracking on a structure arm in late 2012 and began a full inspection and arm replacement of more than 2,000 tangent poles in July 2016. The transmission structures are all steel, single-pole, 345-kV, double-circuit towers. Cracked arms and arm brackets will be replaced, and cracked baseplates and flanges will be repaired.

Inspection, repair and replacement crews are working in tandem, and line clearances will be taken continuously to help speed the work along. Outages will be scheduled one at a time and coordinated with ERCOT to minimize effects on the system.

A detailed work schedule and specifics on the outages' timing and duration can be found in ERCOT's outage scheduler.

MISO NEWS

Capacity Survey Shows MISO in the Black

By Amanda Durish Cook

In a departure from previous years, the 2017 Organization of MISO States-MISO resource adequacy survey suggests the RTO will have sufficient capacity to meet near-term planning requirements.

The annual results show MISO will have 2.7 to 4.8 GW of excess resources from 2018 to 2022, translating into a 16 to 22% reserve margin — "sufficiently" above the 15.8% planning reserve margin requirement, according to MISO.

"The MISO region will have ample electricity-generating resources to meet expected demand while also maintaining an adequate supply of reserves for the next five years," the RTO said in a statement. "The results show an improved resource adequacy outlook compared to last year."

MISO Executive Director of Strategy Shawn McFarlane said this year's range represents a 2-GW increase over the range predicted by last year's survey.

"For the first time in the survey, we show adequate capacity resources," he said during a special June 16 conference call to discuss results.

More than 96% of MISO's load responded to the survey, according to the RTO. "We're glad to see another high participation rate," said OMS President and Indiana Utility Regulatory Commissioner Angela Weber.

The rosier results can be attributed to lower demand forecasts and a lukewarm growth rate of 0.5%, down from 0.8% in 2016, the RTO said. Its forecasted 2018 summer peak of 125.1 GW is down 2.5 GW from predictions made earlier in the year, it said. (See *MISO Slims Summer Reserve Prediction*.)

Changes to the way MISO counts megawatts available as capacity might have also boosted the results. Weighted averages in this year's survey included a 35% share of projects in the definitive planning phase of the interconnection queue, a change made to address stakeholder concerns that the survey was producing overly conservative capacity forecasts. (See *OMS-MISO Survey Moves Ahead with New Calculation*.)

Weber said the process of the survey and results continue to improve. "Capturing resource adequacy for a moment in time remains an important tool," she added.

Last year's survey forecasted that the RTO would exceed its then-projected 15.2% reserve requirement by 0.9 GW — or 0.7% above the 2017 requirement — and that it could face a capacity shortfall by 2018 under a worst-case scenario. (See *OMS-MISO Survey: Generation Shortfall Possible*.) The 2015 survey concluded that a shortfall could occur by 2020.

This year's results show that two zones still face capacity shortfalls in 2018, but MISO said that "load-serving entities in these areas should be able to reliably acquire capacity from outside their zones to meet these needs." Zone 5 in Missouri is expected to have a 0.3-GW shortfall, while Zone 7 in Lower Michigan could come up short by 0.7 to 1 GW. Shortfalls in both areas are predicted to persist into 2022. All other local resource zones are expected to have surpluses ranging anywhere from 0.4 to 1.6 GW in 2018 and 0.2 to 1.5 GW by 2022, except Indiana and Kentucky's Zone 6, which has the potential for either a 0.7 surplus or a 0.4 shortfall by 2022.

Zone 4 in Southern Illinois showed the greatest improvement: Its 1.6-GW forecasted deficit became a 0.7-GW surplus in this year's survey after MISO reduced load, added 0.4 GW of new resources and factored in the increased availability of existing resources in the zone.

"Several units at 1.8 GW that were previously expected to retire were determined to serve MISO load at the committed level," McFarlane said of Zone 4.

Minnesota, Wisconsin and the Dakotas' Zone 1 was limited to 600 MW in exports in 2018 because of a capacity export limit. Exports from MISO South's Zones 8, 9 and 10 were limited to 1.2 GW because of the continued MISO South-to-Midwest constraint from the use of SPP's transmission.

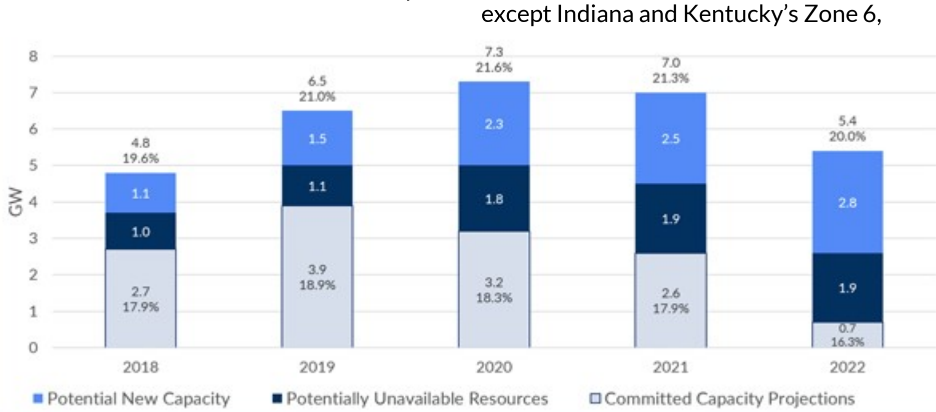
Some stakeholders asked how MISO predicted capacity import and export limits, given that the RTO does not calculate limits more than a year in advance. Laura Rauch, MISO manager of resource adequacy coordination, responded that MISO does estimate out-year import and export limits, but added that export limits only have a "minimal" impact on survey results.

MISO predicts when new transmission will relieve constraints, and the Zone 1 transmission constraint that limits exports to 600 MW is expected to disappear by 2022, Rauch said.

Xcel Energy's Randy Oye asked MISO to provide more detail about how it determines future export limits and transmission constraints, a subject McFarlane said would be discussed at a July 12 Resource Adequacy Subcommittee meeting addressing the zonal breakdown of survey results.

An unforeseen demand increase could affect survey results "unless balanced by policy or market forces." He warned that results are "highly sensitive" to the same load forecasts largely responsible for the excesses shown in the survey.

"We appreciate continued collaboration with the Organization of MISO States to provide this outlook on supply and demand in the MISO region," CEO John Bear said. "This forward-looking view informs and enables collective actions by states and MISO members to ensure continued resource adequacy."



Projected installed capacity (ICAP) | © RTO Insider

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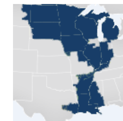

MISO Seeking to Hire More Women, Youth

By Amanda Durish Cook

CARMEL, Ind. — MISO's human resources staff is looking for more ways to hire women and young people to diversify a workforce dominated by Generation X males.

The RTO's annual workforce diversity results were presented during a June 15 conference call of the Human Resources Committee of the Board of Directors.

MISO is faring a bit better at overcoming its gender gap than the electric industry average: The RTO currently employs a 31% female workforce, while the average electric industry workforce average is 21% female. MISO said 36% of 2016 hires were female. The total U.S. workforce is about 47% female.

CEO John Bear said the RTO will continue to seek female representation in its workforce.

"The number of women receiving STEM [science, technology, engineering and mathematics] degrees is incredibly low. … It just means we have to fish from a smaller pond," Bear said.

"We're going to have to be super-focused on this to climb the dial forward," Director Baljit Dail agreed.

MISO staff are also focusing on attracting millennials to close the generational gap across its employees. Generation Xers (ages 35 to 55) account for 62% of MISO's employees. Baby boomers (55+) make up 13% of the MISO workforce and millennials (18-35) represent 25%. Electric industry employees in the U.S. are 50% Generation X, 26% baby boomers and 24% millennials.

Vice President of Human Resources Greg Powell said the age of MISO's employees corresponds with its hiring boom after its was formed in 2001. He added that the "electric power generation, transmission and distribution workforce is aging much faster than the overall U.S. workforce and having great difficulty attracting millennials."

Some directors expressed surprise that MISO's workforce consisted of so few baby boomers.

Dail asked if there are any "hot spots" of baby boomers in any division that could be vulnerable to losing institutional knowledge through retirement.

"We don't have critical positions that have an influx of people getting ready to retire," Powell replied.

MISO is turning to its summer intern program to attract more millennials, Powell said. The RTO has hired 41 summer interns across its four locations this summer, up from 32 last summer. Powell said about 20% are women and 10 to 12% are minorities.

Bear said MISO is looking to increase the number of interns to about 50 in the next year.

"The interns are one of the best advertisements we have. We're not a retail business, so as they go back into their academic communities … they'll spread the word," Bear said.

Powell said it's MISO's goal to hire about 50% of its interns on a permanent basis; it currently hires about 30%. "The challenge is these folks are pretty sought after," Bear said.

Scorecard Uncovers Three MISO IT Issues

By Amanda Durish Cook

CARMEL, Ind. — A quarterly IT scorecard audit has uncovered three technology-related issues for MISO staff to address.

In light of the audit, MISO will review a nine-hour website outage, continue to ensure that ex-employees don't have system access 24 hours beyond their departure and commit more time to building its own settlement software system, the Technology Committee of the Board of Directors learned during a June 15 conference call.

MISO Technology Executive Kevin Caringer said the RTO will need an additional $390,000 to build its own settlement system software because staff were in some cases required to reverse-engineer the existing system to find original settlement software code.

Director Baljit Dail said MISO should have all software code already documented as standard practice. "It gets into a very scary place where we want to change the code but we don't know what the original code is or what it does," he said.

Caringer said MISO had a majority of the original code and will run the old and new code in parallel for a few days until determining the success of the RTO-built system. If the new code fails, MISO will revert to the old code.

"We have done this in the past in MISO as well for other major changes. It's something we're familiar with," Caringer said.

He also noted that MISO will use the software to implement five-minute real-time settlements, which are expected in January.

The RTO meanwhile continues to strive to terminate the system access of former employees within 24 hours, Chief Information Officer Keri Glitch said.

"We are moving on a positive trajectory, and I have confidence we'll continue moving forward," Glitch said.

MISO has consistently scored near 100% in timely access terminations since February, up from a low of 42% in November. The RTO said access termination issues can arise when a third-party vendor fails to notify it when a contractor leaves.

Dail asked if MISO has any recourse if a vendor fails to alert it of exiting contractors.

Glitch said the RTO is developing new contract language setting out a procedure for vendors to notify it and terminate access.

The RTO is also reviewing a nine-hour public website outage that occurred from 4 p.m. to 1 a.m. on a Friday evening in March, after a physical network device failed and an employee exacerbated the situation by improperly configuring a switch-over to a backup device — leading to the outage.

"It appeared to be a human error," Glitch said, adding that hardware components on critical network switches rarely fail.

Glitch said MISO is conducting a review of overall network design and failover capabilities when third-party vendors are involved.

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MISO to File Interconnection Queue BPM; Task Force Extended

MISO has aligned its Business Practices Manuals with interconnection queue improvements approved by FERC at the beginning of the year (ER17-156). (See *FERC Accepts MISO's 2nd Try on Queue Reform*.)

Muncy

Paul Muncy, of MISO's transmission access planning division, told the Planning Advisory Committee last week that BPM 015 mirrors the RTO's queue filing and is nearly complete, with final review expected over the next few weeks. Language was crafted by the Interconnection Process Task Force (IPTF), which was due to sunset in July but will now continue through December after a unanimous sector vote to extend the group's existence by six months.

Muncy also said MISO will create a separate process for a few HVDC projects currently in the queue's system planning and analysis phase. The RTO has already filed to immediately move those projects out of the queue and put them in a holding pattern (ER17-1793). Muncy said a filing on the new process will be ready by the end of this year.

The Merchant HVDC Task Team will work on the separate HVDC filing, stakeholder sectors decided in a vote at the meeting. Muncy said the team began work on Tariff language, but the RTO prefers to transfer that job to the IPTF, which makes recommendations involving interconnection queue revisions. During a sector vote at the PAC meeting, the Coordinating, Transmission Owners and Environmental sectors voted to keep the assignment in the task team, with only the Transmission-Dependent Utilities sector voting in favor of an IPTF handoff. The State Regulatory, Power Marketers and End Users sectors abstained from voting.

MISO Moves Toward Singular Attachment Y Status

MISO plans by the end of the year to introduce Tariff changes eliminating resource suspensions in favor of a single retirement process that would allow a potentially retiring resource to retain the ability to participate in an upcoming capacity auction.

The RTO proposes to reduce its Attachment Y process to a catch-all "economic shutdown" status that no longer recognizes temporary suspensions or require resource owners to provide return dates. Owners could reverse a retirement decision over a full planning year and participate in an upcoming Planning Resource Auction. The same yearlong rescission period will apply to system support resources whose status has been lifted by MISO. (See "Removal of Temporary Suspensions will Provide Generators Flexibility, RTO says," *MISO Planning Advisory Committee Briefs*.)

Reddoch

"We don't need to have a separate process for handling suspensions," MISO adviser Joe Reddoch said.

MISO will add a provision allowing it to terminate interconnection service for units that have been on extended outage for more than 36 months, he said. "This allows us to dispose of models in our planning studies that are inoperable but show up as available. This way we get rid of the hoarding of interconnection service."

An additional provision would permit an asset owner to waive its right to rescind a retirement decision and progress directly to retirement. Reddoch said some resource owners might be ready to make a binding decision by the time they file an Attachment Y request.

Reddoch said the proposal's largest point of contention is the removal of confidentiality for results of Attachment Y reliability studies. By the time confidentiality is lifted, generator owners would on average be three months away from retirement and would have likely made a public announcement, he said.

MISO said it is not "seeking to assume the responsibility or to pre-empt the owner's announcement of a generator retirement, but Attachment Y is late enough in the process for the owner to have made preparations for the decommissioning process."

"We feel that it's so late in the game, we don't see it as detrimental to the asset owner," Reddoch said.

PAC OKs Competitive Tx Task Team Extension

PAC sectors approved a six-month extension of MISO's Competitive Transmission Task Team.

Brian Pedersen, manager of competitive transmission, sought the extension to enable the group to continue identifying improvements to the RTO's competitive project selection process in preparation for a future Tariff filing. The team was created after MISO selected LS Power to develop the Duff-Coleman 345-kV transmission project in December. (See *Texas Law Could Affect MISO Competitive Transmission*.)

"We want to make sure proposals take less time and money to evaluate," Pedersen said.

The PAC allowed the extension by consent. Chair Cynthia Crane will report the extension at a July 26 meeting of the Steering Committee, which could ask why the group has not completed its original mission in the usual six-month time frame allotted to task teams.

MISO Extends Scoping for Long-Term Overlay Study

MISO will spend more time scoping its long-term overlay study, extending analyses into the first quarter of 2018 in order to better assess system needs.

MISO's Lynn Hecker said the RTO needs more time to analyze system drivers of resilience and reliability 20 years into the future and discuss how the study will differ from annual Transmission Expansion Plan studies. In April, MISO released a preliminary overlay map of transmission needs that might be considered. (See *MISO Planners Looking at 3 La. Projects, Overlay 'Skeleton'*.)

MISO canceled its next Economic Planning Users Group on July 27, where a discussion of the study was planned. Hecker said the RTO will plan a November special workshop to discuss scoping with stakeholders.

The extra quarter dedicated to analysis is not expected to alter the overall study timeline at this point, Hecker said. Projects resulting from the long-term overlay are not expected until the third quarter of 2018, with business cases discussed throughout 2019 before a targeted end-of-year approv-

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MISO NEWS

MISO Rethinks Weighting of MTEP 18 Futures

By Amanda Durish Cook

CARMEL, Ind. — Recent market developments are compelling MISO to reconsider how it weighs the relative importance of its 15-year future scenarios designed to inform its 2018 Transmission Expansion Plan, staff said last week.

Ellis

"The final MTEP futures reflect the various opinions of this group," Matt Ellis, a MISO policy studies engineer, told the Planning Advisory Committee at its June 14 meeting. He noted that the RTO sifted through 128 pages of stakeholder input to create the four recently completed futures.

MISO is proposing to eliminate futures weighting — which assigns a probability-based likelihood to each MTEP planning scenario — in favor of placing equal importance on each of the four futures. The proposal comes after stakeholders criticized the RTO's weighting process for not being transparent enough. Some MISO South members called for less stringent carbon-reduction estimates. (See MISO Changes MTEP Futures Weighting for South.)

"It comes down to no one knows what the future will bring," Ellis said. "The whole point with this that we're truly trying to acknowledge is no one knows what is going to happen 15 years out, so let's give them equal consideration."

Uncertain Outlook for Carbon, Nukes

President Trump's decision to withdraw the U.S. from the Paris Agreement on climate change prompted some stakeholders to ask if MISO should further reduce the 20% target carbon reduction in the accelerated alternative technologies future. (See Trump Pulling US Out of Paris Climate Accord.) Other stakeholders contend that some states' renewed commitment to the agreement in the wake of Trump's move indicated a possible need to increase the carbon-reduction constraint.

Ellis said MISO plans to keep the 20% carbon reduction measure. "It's something we'll keep an eye on," he added.

Nuclear retirements easily earned the most stakeholder comment, according to Ellis. They were included last month as part of MISO's fourth and newest future — a distributed and emerging technologies scenario. (See "MISO Tweaks 4th and Newest MTEP Future," MISO Planning Advisory Committee Briefs.)

MISO will assume that 5 GW of nuclear will retire by 2032 based on the license expiration dates of five units in the RTO's footprint, which include Callaway Unit 1 in Missouri, Clinton Unit 1 in Illinois, Palisades in Michigan, Point Beach Unit 1 in Wisconsin and River Bend Unit 1 in Louisiana.

Some stakeholders asked MISO to consider nuclear economic data in forecasting retirements, but Ellis reminded them that the RTO uses only public information to inform MTEP futures, precluding the inclusion of forecasted retirements based on the future financial viability of nuclear units, which is considered confidential.

Richard Seide of Apex Clean Energy said he was troubled that MISO would only use license expiration dates to forecast nuclear retirements. Ellis asked for stakeholders to submit their reasoning for including or removing other nuclear retirements from a future scenario.

Equal Weighting Spurs Doubts

Some stakeholders expressed surprise at MISO's proposal to weigh all scenarios equally, saying they agreed on the futures under the assumption they would have input on weighting them.

"My concern boils down to: We're pretty comfortable with the futures process now because we know we can weight them later. I think there will be a lot more focus on the development of futures," WPPI Energy's Steve Leovy said. He asked for MISO to delay finalizing the futures to ensure that stakeholders agree to those that could be applied equally across MTEP projects.

Stakeholders have until July 14 to comment on MISO's proposal.

Ellis also said the RTO will attempt a series of workshops to improve project siting for the MTEP 19 cycle, especially for renewables. He said he would bring a proposal for workshops to the July Planning Advisory Committee meeting.

PAC Briefs

Continued from page 23

al on projects that make the cut.

Expedited Project Requests Move to MTEP 17

MISO is recommending that three expedited projects valued at $16.3 million advance to the 2017 Transmission Expansion Plan. Three other project requests are still under consideration.

Two southern Louisiana projects were recommended for MTEP 17 inclusion after reliability studies. Thompson Adu, senior manager of transmission expansion planning, said Entergy's new $1.3 million Roux Substation and transformer upgrade will proceed, along with the company's new $11.3 million Lyle Substation and associated rebuild of a 10-mile, 69-kV circuit.

MISO is also recommending ITC Holdings' proposed $3.7 million, 120-kV Zephyr Substation and circuit in southeastern Michigan after determining the project will have no adverse reliability impacts.

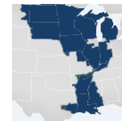
The RTO is still assessing two substation projects in Iowa, Adu said. If approved, ITC would construct the $3.2 million Van Allen 69/12.5-kV and $2.2 million 69/25-kV West Okoboji Lakes substations.

"MISO is collaborating with transmission owners to perform a reliability no-harm test," Adu said, adding that it should have recommendations on the projects by July.

Finally, Wolverine Power Supply's $3.7 million Iron Works station and 120-kV loop project to support induction furnace load in southeastern Michigan has not turned up any reliability issues so far, but MISO is still studying the project, Adu said.

— Amanda Durish Cook

MISO NEWS



MISO to Release Competitive Tx Project Cost Guide

By Amanda Durish Cook

CARMEL, Ind. — MISO will publish a guide describing its cost estimation process for competitive transmission projects by August, according to RTO staff.

"We're going to really document how we create our cost estimates," Alex Monn, MISO senior substation design engineer, said during a June 13 Planning Subcommittee meeting.

The RTO has also changed some aspects of its original cost estimation proposal based on stakeholder input.

With the emergence of competition to build transmission under FERC Order 1000, MISO had to begin providing cost estimates for competitive projects in order to protect the confidentiality of developers' bids. The RTO wants to put a more transparent process in place before the next competitive project is opened to bidding. (See "MISO Seeks to Improve Tx Cost Estimates," *MISO Planning Subcommittee Briefs*.)

MISO plans to release both a planning-level cost estimate process and a more final scoping-level one. Stakeholders will review the RTO's procedures on an annual basis, with the first review scheduled for January 2018.

"We're going to make this a yearly cycle," Monn said.

Stakeholders generally agreed on MISO's new 20% project cost contingency allotment, up from an earlier 15% allowance: "Twenty percent is where everyone landed, so that seems like a good estimate for us," Monn said.

However, MISO will keep overhead project cost allocation at 10% of the total project cost despite some stakeholder discord.

"In talking to stakeholders, everyone had a different basket of overhead costs," Monn said. He said MISO staff still believe 10% is the most reasonable figure.

MISO transmission design engineer Devang Joshi said the RTO has increased its planning-level cost estimate for transmission line length to the straight distance between substations plus an additional 30% of the length. Stakeholders asked for more leeway after the RTO originally proposed a straight-line length plus a 20% adder. For scoping-level cost estimates, MISO will create a "reasonable proxy route for the purposes of determining a line length."

The RTO has also simplified terrain and grading project cost impacts into three categories apiece. Terrain types include flat lands with light vegetation, forested areas and wetlands, with each represented by cost per acre and mile instead of MISO's originally proposed terrain multiplier. Grading types are identified as "typical" (with the land being less than 30% sloped), "rough" (30 to 50% slopes) or "mountainous" (greater than 50% slopes).

At stakeholder request, the RTO has also added a cost estimate for constructing access roads to substation construction sites, but it reduced transformer cost to a simple unit cost of the transformer instead of a "turnkey" cost that would have provided for other construction materials.

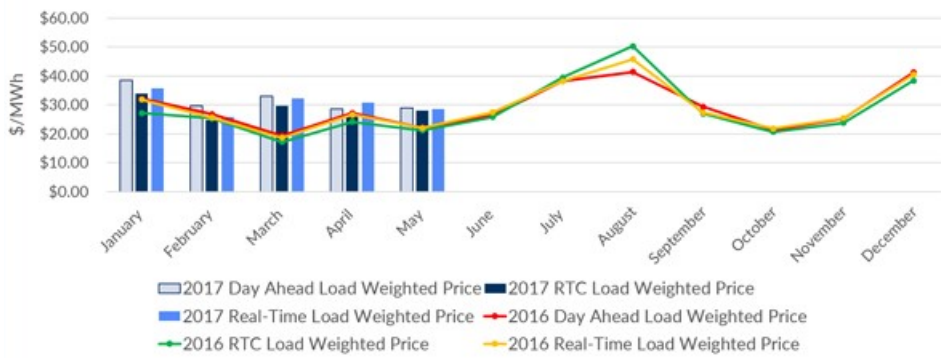
NYISO News

Management Committee Briefs

Major Emergency in May Follows One in April

BOLTON LANDING, N.Y. — NYISO said last week that it declared a major emergency on May 21 during the hour beginning 5 p.m. after the loss of 1,000 MW of generation in ISO-NE caused the Central East interface flow to exceed its voltage collapse limit.

It was the second major emergency declaration in a month after one in April, also stemming from interface flow problems. NYISO had last declared a major emergency in July 2016.



NYISO monthly average LBMPs, 2016-17 | *NYISO*

Wes Yeomans, NYISO vice president of operations, presented the ISO's May 2017 operations report during a June 13 Management Committee. The report showed that last month's peak load of 25,578 MW occurred May 18 and that the month saw more than nine hours of thunderstorm alerts.

The grid operator reported that Lower Hudson Valley installed capacity (ICAP) prices for June fell by 27 cents month over month to $10.01/kW-month, while New York City was down by 33 cents to $10.24. Both declines stemmed from increases in generator unforced capacity available and a decrease in unoffered megawatts. The New York Control Area ICAP price meanwhile increased by $2.17 to $3.89, primarily because of reduced imports and increased exports.

Natural Gas down a Penny from April, up 76% from 2016

In his CEO/COO report to the Management Committee, NYISO COO Rick Gonzales noted that the ISO's May average year-to-date monthly energy cost of $36.54/MWh represented a 22% increase from May 2016. The average locational-based marginal price for May was $31.74/MWh, compared with $23.31/MWh a year earlier.

May natural gas prices on the Transco Z6 pipeline serving New York City were down a penny from the prior month to $2.80/MMBtu but up 76.5% year over year. The grid operator's average daily sendout was 383 GWh/day in May, compared with 377 in April and 397 in May 2016.

May distillate prices were down compared to the previous month but up 7.4% year on year. Total uplift costs were higher than in April, while costs per megawatt-hour fell. The local reliability share for uplift was 24 cents/MWh, up from 20 cents/MWh in April, and the statewide share was -13 cents/MWh, down from -8 cents/MWh.

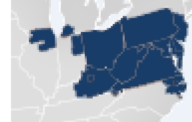
New Testing Requirement for Automatic Swap Dual-Fuel Units

The Management Committee approved revisions to NYISO's Market Services Tariff as described in the "Zone J Dual Fuel Testing Tariff Revisions" and recommended that the Board of Directors authorize filing the revisions under Section 205 of the Federal Power Act.

The New York State Reliability Council Rule G2 R4 requires combined cycle units in Zone J (New York City) that can automatically swap fuel type to test that capability during each capability period. NYISO is updating its Services Tariff Section 4.1.9 and Ancillary Services Manual Section 8 to comply with the rule.

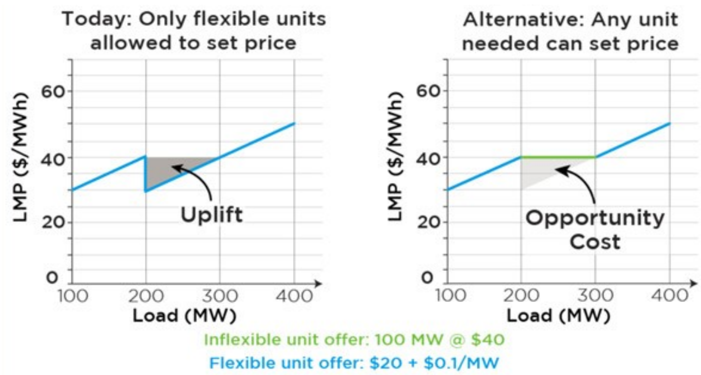
— Michael Kuser

PJM NEWS



PJM Making Moves to Preserve Market Integrity

By Rory D. Sweeney



Current vs. alternative LMP-setting logic | *PJM*

For some time, PJM has found itself in a no-win situation, pitting stakeholders valuing market consistency against those seeking flexibility to integrate changing ideas and technologies.

From technological advancements that have reduced demand, to the shale gas boom that has upended the supply stack, to governmental actions that have artificially buoyed preferred technologies, what's an RTO to do?

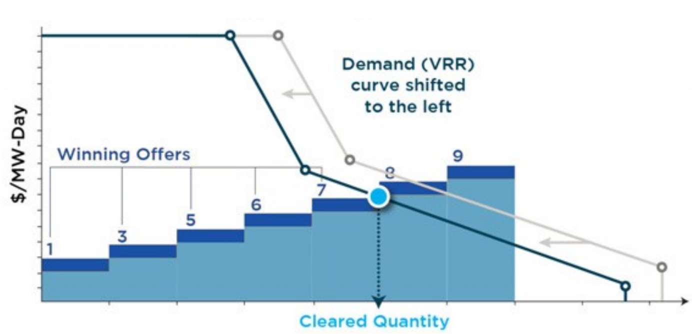
"Increasingly, public policies seek to recognize value associated with generation plants beyond their cost effectiveness and reliability attributes," PJM said in an explanatory document released last week. "The most recent iteration of state policies has involved explicit, legislatively driven subsidies for specific generating units. These types of subsidies can suppress wholesale electricity market prices and threaten these markets' basic design mission."

But through that document and three supporting papers, PJM believes it has found a way forward. The RTO published the document along with the last two of three working papers that each focus on addressing different aspects of the issue.

The first, published the same day as a May FERC technical conference analyzing the viability of energy markets, offered guidelines for how states could work with PJM to develop carbon pricing rules that integrate with existing market structures. (See *PJM Stakeholders Offer Different Takes on Markets' Viability*.)

The second, published last week as an update of a proposal PJM floated last year, outlines a two-phase capacity auction that would allow subsidized resources to be counted as available reserves without influencing the clearing price. (See *PJM's Grid 20/20 Ponders Mixing Public Policy, Competitive Markets*.)

Also published last week was a third paper containing ideas initially advanced in PJM's response to its Independent Market Monitor's 2016 State of the Market report. In it, the RTO proposes tweaks to its energy market design to address complaints that market factors — both naturally developing and artificially introduced — have improperly depressed clearing prices so that true real-time costs aren't being accurately reflected. The grid operator argues that its price-setting logic should be revised to allow inflexible units to set LMPs. (See *PJM Differs with Monitor in State of the Market Response*.)



Subsidized supply offers and equivalent demand removed | *PJM*

"Since the inception of competitive wholesale electricity markets, the industry has evolved significantly and in ways that could not have been fully anticipated," the document said. "Technological disruptions … have altered the economics of electricity supply, creating new opportunities and challenges. … These shifts in economic trends and market dynamics could lead to an unintended bias in the energy markets favoring lower capital cost resources … [putting] financial stress on all units, but particularly large units with high capital costs."

The proposals face an uphill battle for acceptance. Stakeholders have criticized PJM for filing some of the ideas with FERC as additional testimony during the technical conference. The Monitor opposes the proposed changes to the LMP-setting logic.

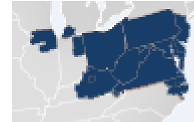
Market participants have also expressed concerns with the RTO's two-phase capacity auction proposal. And carbon pricing was a tough sell long before President Trump set out to eliminate his predecessor's signature Clean Power Plan. (See *Trump Order Begins Perilous Attempt to Undo Clean Power Plan*.)

PJM acknowledges the work ahead. The capacity proposal, it said, "likely will be evaluated with other potential solutions" by the Capacity Constructs/Public Policy Senior Task Force, which has been meeting regularly since January and remains mired in foundational discussions on the basic goals of a capacity construct. (See *PJM Capacity Task Force Debates the Value of Price Transparency*.)

The other proposals haven't found a home for discussion yet, but the RTO is confident something must be done.

"I certainly think a do-nothing approach going forward puts the goals of the markets in general at risk," Stu Bresler, PJM's senior vice president of operations and markets, said at PJM's Grid 20/20 conference on the issue last August. "The risk of a do-nothing approach is a detrimental effect on the long-term price signal."

PJM NEWS



PJM Monitor Rejects Fuel-Cost Policies for 11% of Units

By Rory D. Sweeney

PJM's Independent Market Monitor said last week that that it has rejected fuel-cost policies for 11% of generating units for the review period ending May 15.

The Monitor said 22 of the 479 power supplier fuel-cost policies it evaluated — less than 5% of the policies, but representing 11% of the units — failed to meet its standards for being algorithmic, verifiable and systematic.

Sellers must go through the process again starting June 15, when PJM's annual review period begins. The annual review runs through Nov. 1.

The policies are important because sellers will be penalized if they choose to offer into PJM's markets without them. "Before you put an offer into Market Gateway, you need to have an approved fuel-cost policy," PJM's Jeff Schmitt said.

'Ask Bob'

The initial review was the culmination of a long and often contentious coordination between the RTO and Monitor to get every market seller who must source fuel to submit a policy explaining how it developed the fuel costs included in its cost-based offers. PJM approved all offers submitted.

"We don't actually agree with PJM that all of the policies that PJM agreed to were consistent with the Tariff," Bowring said. There were several of the issues that caused his team to fail policies, including submission of unsupported cost adders and reliance on internal estimates.

"That's what we refer to as 'Ask Bob.' So you go down the hall and ask your trader," Bowring said, noting that the "probably 80%" of gas-fired units that used that method two years ago was "reduced dramatically."

Some of the explanations shocked stakeholders.

"Someone for real submitted a gas hub that was not in any way, shape or form physically related to the unit that they were submitting it for and didn't give an explanation as to why?" EnerNOC's Katie Guerry asked. "You're saying that someone submitted it without any sort of attempt at explaining it to you, knowing who you are?"

"Precisely," Bowring responded. "Believe me, we understand all the nuance and subtleties about how it could be."

Fatigue Among Stakeholders

The ongoing fuel-cost policy requirements have created fatigue among some stakeholders. During last week's Market Implementation Committee meeting, Gabel Associates' Mike Borgatti reconstructed the timeline. "By May 15, we had to get our fuel-cost policies approved to resubmit them by June 15 to maybe get them approved again by Nov. 1, right?" he asked.

Sellers are required by June 15 to submit updated policies to PJM or confirm that their current policies remain compliant. The Monitor will make its determination on policy reviews by Aug. 1, which is also the deadline for sellers to provide policies and sample emissions, variable operations and maintenance calculations to PJM. The Monitor plans to have a fuel-cost policy template incorporating hourly offers available this week, and PJM expects to have its templates ready June 30.

PJM will make its determination on polices by Nov. 1. Schmitt said that review will capture any changes to ensure the policies allow for intraday offers.

"It's not that we're trying to recreate work. We just want to make sure that we're good to go going forward for the winter," he explained.

With the implementation of FERC Order 825, sellers will be able to update offers hourly to adjust for changing market and supply conditions.

"We know this process is not easy," said Joel Romero Luna, who is part of Bowring's team at Monitoring Analytics. "I'll be surprised if anyone submits by June 15 a policy that captures hourly offers, so it's my expectation that we'll work through it, and hopefully we'll get something acceptable by Nov. 1."

Online Systems

Going forward, PJM and the Monitor will be using online systems for the process. The Monitor will require all market participants to use a new section on its Member Information Reporting Applica-

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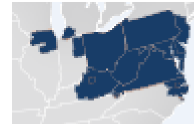
PJM News



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 (9:10-9:40)

Members will be asked to endorse the following proposed manual changes:

A. Manual 14A: Generation and Transmission Interconnection Process and the Tariff. Revisions developed to the manual and the Tariff to allocate reinforcement costs of less than $5 million to all projects in a queue that add load to the violation causing the need for the reinforcement. Also removes alternate queue screening, allowing projects to be evaluated for impacts once the point of interconnection has been established. (See "Should I Stay or Should I Go? PJM Still Searching for Resolution to Interconnection Queue Issues," *PJM Planning and Tx Expansion Advisory Committees Briefs*.)

B. Manual 14C: Generation and Transmission Interconnection Facility Construction. Revisions developed to incorporate the minimum engineering design standards developed by the Designated Entity Design Standards Taskforce for competitively solicited projects for transmission lines, substations and "system protection and control design and coordination." (See "Competitive Planning Components Endorsed; Pieces Remain," *PJM Planning & Tx Expansion Advisory Committees Briefs*.)

C. Manual 14F: Competitive Planning Process. A new manual that consolidates PJM policies implementing FERC Order 1000. (See "Competitive Planning Components Endorsed; Pieces Remain," *PJM Planning & Tx Expansion Advisory Committees Briefs*.)

D. Manual 20: PJM Resource Adequacy Analysis. Revisions developed to address changes to modeling of zonal and global locational deliverability areas for capacity emergency transfer objective calculations. (See "ISO-NE out of this 'World,' According to PJM Reserve Requirement Study," *PJM Planning Committee/TEAC Briefs*.)

E. Manual 28: Operating Agreement Accounting. Revisions conform with FERC order in docket ER16-121-001 requiring allocation of balancing congestion and real-time market-to-market payments to real-time load plus exports on a *pro rata* basis RTO-wide. (See *FERC Finds PJM ARR/FTR Market Design Flawed; Rejects Proposed Fix* and "FTR Revisions Continue Forward," *PJM Market Implementation Committee Briefs*.)

F. Manual 39: Nuclear Plant Interface Coordination. Revisions clarify that nuclear operators must communicate any limiting conditions affecting interface requirements following notification of a grid-side event. The revisions, which include limits on the operability of offsite power sources, are intended to ensure that PJM and the transmission owner local control center have situational awareness of nuclear plant conditions.

3. Pseudo-Tie Pro Forma (9:40-10:15)

Members will be asked to endorse proposed *pro forma* agreements, along with corresponding Tariff and Operating Agreement revisions. A draft dynamic schedule agreement will also be presented, but it will be voted on at a future meeting. (See "Pseudo-Tie Discussion Postponed to Continue Negotiations with MISO," *PJM Markets and Reliability Committee Briefs*.)

4. Regulation Market Issues Senior Task Force (RMISTF) (10:15-10:45)

Members will be asked to endorse the regulation market changes proposed by PJM and the Independent Market Monitor and endorsed by the Regulation Market Issues Senior Task Force. The changes affect benefit factors, performance scoring and settlements, and implements a 24-month transition plan. (See "Stakeholders Defer Vote on Regulation Revisions," *PJM Markets and Reliability Committee Briefs*.)

Members Committee

Consent Agenda (1:20-1:25)

Members will be asked to endorse:

B. Operating Agreement and Tariff revisions requiring solar generators to provide meteorological and forced outage data — previously only required from wind generators — in compliance with FERC Order 764. (See "Solar Forecast Is Coming," *PJM Planning and Tx Expansion Advisory Committees Briefs*.)

C. Operating Agreement and Tariff revisions create a method for compensating pseudo-tied generators and dynamic schedules, which are not eligible to submit meter correction data, as permitted for internal generators and tie lines. (See "Meter Correction Initiative OK'd," *PJM Market Implementation Committee Briefs*.)

D. Operating Agreement and Tariff revisions related to annual revenue requirements for new black start units. Sets deadlines for the submittal and review of new black start units' capital, variable and fuel storage costs; policies for allocating costs to network service customers and point-to-point reservations. (See "New Black Start Units Will Have New Annual Revenue Requirements," *PJM Markets and Reliability Committee Briefs*.)

1. Energy Market Uplift Senior Task Force (1:25-1:45)

Members will be asked to endorse proposed Tariff and Operating Agreement revisions intended to preserve the benefits of virtual trading while eliminating opportunities for such transactions to profit from the market without providing benefits. Increment offers (INCs) and decrement bids (DECs) are permitted at locations where the settlement of physical energy occurs plus trading hubs; up-to-congestion transactions are permitted at hubs, zones and interfaces. (See *PJM MRC OKs Uplift Solution over Financial Marketers' Opposition*.)

— Rory D. Sweeney

Monitor Rejects Fuel-Cost Policies for 11% of Units

Continued from page 28

tion (MIRA) for reporting cost-based offer data as of June 30.

The new "Cost Offer Assumptions" module was brought online June 12 with the expectation of having all market sellers transitioned by the end of June. The Monitor uses the inputs to verify sellers' cost-based offers. Participants will need to verify that the data is correct because "incorrect or incomplete data in MIRA may trigger an evaluation of cost-based offers for potential penalties under Schedule 2 of the Operating Agreement," the Monitor said.

PJM will also be using "a tool" to track policies, which Schmitt said could be MIRA — although that isn't assured.

Bowring said one of his frustrations is securing PJM's commitment on the topic.

"My read of what PJM has been telling us is that they don't intend to rely on MIRA, but I'm not quite sure why. It's going to cost them at least millions of dollars in order to replace it on their side," he said. "Until PJM tells us they're going to rely on it, we're not making changes to make it work more smoothly for PJM."

SPP NEWS

Seams Steering Committee Briefs

Interregional Project Begins Regional Review

Having agreed on a first potential interregional project with MISO, SPP is moving the 115-kV line in South Dakota through regional review.

SPP Interregional Coordinator Adam Bell told the Seams Steering Committee on June 14 that staff is working with the Economic Studies Working Group to develop a draft scope of the project.

The working group recommends using Futures 1 and 3 from the updated 2025 models in the 2017 Integrated Transmission Planning 10-Year Assessment to calculate the project's one-year benefit-to-cost ratio. The group is also recommending using adjusted production cost and transmission outage mitigation as metrics in computing the ratio.

The SSC and ESWG will be the primary stakeholder groups directing the regional review, Bell said. They will make a recommendation to the Markets and Operations Policy Committee, with any approval from the Board of Directors coming in October.

The RTOs' Interregional Planning Stakeholder Advisory Committee endorsed the $5.2 million project in April, and both stakeholder groups have since given their sign-off.

The project loops a Split Rock-Lawrence 115-kV circuit into Sioux Falls to relieve congestion on the Lawrence-Sioux Falls 115-kV line, shared by the Western Area Power Administration in SPP and Xcel Energy in MISO.

The project was the only one of seven joint recommendations to survive a coordinated system study conducted by the RTOs last year. Some of the projects failed to pass muster because of a $5 million threshold for interregional projects, a metric both RTOs are open to changing. (See *1 Project Recommended for MISO-SPP Coordinated Plan*.)

SPP Continuing to Study Overlapping Charges

SPP staff continues to gather data on overlapping charges along the RTO's seam with MISO, part of a coordinated effort by the two grid operators to determine the size of the problem they're dealing with and whether agreements between transmission owners address transmission service.

Clint Savoy, senior interregional coordinator, said the issue arose with a MISO TO's emergency tie agreement with an SPP member. The load was reliant on SPP facilities for service.

"We're still reliant on the transmission owners and customers to tell us when these events occur," Savoy said. "It would save the transmission customers money, without requiring system changes."

Savoy said feedback from members has been slow so far, but staff is following up with those who have not yet responded.

The options before SPP and MISO include:

- Revising their Tariffs and/or joint operating agreement to allow for after-the-fact reservations of transmission service for "abnormal" system conditions without unreserved-use penalties;
- Revise the Tariffs and JOA to allow for after-the-fact accounting between transmission providers for abnormal system conditions without unreserved-use penalties;
- Make no changes and still apply penalties when service is not prearranged; or
- Revise Tariffs and/or market protocols to require settlement-location registration for any potential situations, or provide for a proxy for pricing congestion and losses.

Savoy said SPP's Regional Tariff and Market working groups will take up the discussion and draft revision requests that might be necessary.

MISO Sends $2.15M in M2M Payments to SPP

Market-to-market payments from MISO to SPP in April dropped to almost half of those in March, with SPP collecting $2.15 million for congested flowgates between the two RTOs. MISO had sent its neighbor $3.98 million in March.

SPP has now collected $21.4 million from its neighbor since the two began the M2M process in March 2015.

Temporary flowgates racked up most of the payments ($1.38 million), binding for 435 hours. Permanent flowgates, which normally account for most the payments, were binding for 347 hours.

— Tom Kleckner

FERC NEWS

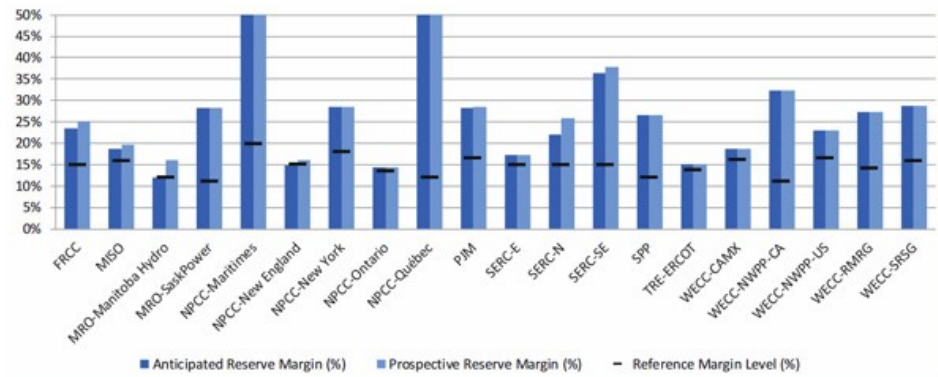
NERC: Despite Solid 2016, Grid Threats Remain

Continued from page 1

NERC last week released its annual analysis of the grid's performance, which found that while 2016 ranked as the second-most reliable year on record, threats to the system — particularly on the cybersecurity front — are on the rise.

The revelation adds weight to a recent joint FERC/NERC report that found that recovery of the bulk power system (BPS) from a blackout could be a lengthy and resource-consuming process if supervisory control and data acquisition (SCADA) and energy management system (EMS) functionality are also lost. The report was based on responses from eight industry participants who provided information for the study.

The system's cumulative severity risk index (SRI) for 2016 is second only to 2011 since the metric began being tracked in 2008. Breaking it down by each BPS component, unplanned generation unavailability accounted for the vast majority of cumulative SRI, which the report said is typical. Transmission loss made up about a fifth of the total, and load loss was relatively minimal.



Summer 2017 reserve margins by region | *NERC*

"No single component shows a significant step change for any given day," the NERC report says. "The performance within each segment proves to be very stable."

James Merlo, NERC's senior director of

Continued on page 32

FERC: US Resource Adequacy Good for Hot Summer

By Michael Brooks

Planning reserve margins across most of the U.S. are expected to be adequate for a hotter-than-normal summer, with only ISO-NE barely missing its NERC target, FERC said in its annual summer reliability report released Thursday.

The report analyzed reference levels and margins for all U.S. RTOs and ISOs, as well as NERC's SERC Reliability, Florida Reliability Coordinating Council and Western Electricity Coordinating Council regions.

ISO-NE is expected to come in just shy of its 15.1% target with a 14.88% reserve margin. FERC staff said tight supply conditions could develop as a result of about 700 MW of new resources not coming online as expected.

"ISO-NE may be required to rely on additional imports from neighboring regions as well as implementing operating procedures to maintain reliability during possible periods of supply deficiencies," the report said.

While ERCOT's reserve margin is also tight, the ISO expects to have sufficient capacity to meet peak summer demand, with only a few local areas in southern and western Texas at risk of reliability issues, partially because of strong load growth.

SPP is expected to exceed its target the most; the RTO recently reduced its reserve margin to 12% from 13.6%. (See *Waiting on FERC, SPP Members Cut Reserve Margin*.)

NERC data show total U.S. generating capacity has risen by about 1% since last summer, matching a comparable increase in load. This comes despite the retirement of about 10 GW of combined coal- and natural gas-fired capacity over the last year.

This summer will see an additional 20 GW of new capacity, mostly from wind and solar resources, FERC staff said. NERC anticipates that total wind capacity will be up 8% over last year to 82 GW. The only new nonrenewable resources: 2 GW of gas-fired capacity in the Eastern Interconnection.

"The growing importance of renewable resources has continued in recent years, as both wind and solar capacity continue to expand," FERC staff said. "Grid operators are pursuing operational solutions to better integrate wind and solar resources as part of their operational and planning activities."

Staff noted the near record-high levels of snowpack in the West, particularly California, which could boost reliance on hydropower to mitigate any possible natural gas constraints stemming from the restrictions on the Aliso Canyon storage facility.

"While the restrictions on Aliso Canyon did not pose any major issues during the 2016 summer, the limited availability of the Aliso Canyon natural gas storage facility in Southern California may pose a risk to gas and electric reliability this summer if hotter-than-normal weather conditions and unplanned gas pipeline outages materialize," the report said.

The National Oceanic and Atmospheric Administration is forecasting above-normal summer temperatures for most of the continental U.S., with the entire East Coast most likely to see an increase over the average.

FERC NEWS

NERC: Despite Solid 2016, Grid Threats Remain

Continued from page 31

reliability risk management, said that 2016 was the second consecutive year in which no daily SRI broke the top 10 most severe days on record, despite days with severe weather. This indicated that the BPS is becoming increasingly resilient to severe conditions, he said.

Merlo reported that overall transmission outage severity was reduced year over year. For the second consecutive year, there were no Category 4 or 5 events — the most severe — and only two Category 3 events.

Still, outages caused by human error last year increased to 2014 levels after falling in 2015.

"While no increase in outage severity was discovered, human error remains a major contributor to transmission outage severity and will remain an area of focus," the report said.

However, the misoperation rate continued a four-year trend of decline across North America. Misoperation events have the highest correlation with the most severe outages.

Frequency response, what Merlo called the "heartbeat of the grid," is "looking good," he said. It remains flat or improving across the continent. He said frequency response becomes "different" but not necessarily harder with the influx of intermittent resources on the system.

He also reported that no load was lost to physical or cybersecurity attacks but noted that such attacks are increasing.

"It's a positive finding, but I think we all know that we're going to have to give our attention in this area based on the risk increasing every day," he said.

The report highlights National Institute of Standards and Technology data that indicate high-severity cybersecurity vulnerabilities are consistently increasing. However, vulnerabilities increased 23%, while incidents increased 38%.

"Vulnerabilities are increasingly being successfully exploited, [which] reinforces the need for organizations to continue to enhance their cybersecurity capabilities," the report says.

The threat was further accentuated in the joint report from FERC and NERC, which found that all participants would remain capable of executing their restoration plans without SCADA/EMS availability by leveraging redundancies. However, the process would be more complicated, take more time, require more resources and rely much more on "interpersonal" communications.

"Participants indicated that system restoration steps [that] involve additional communications and coordination with multiple personnel, such as load pick-up, will be more labor-intensive in the absence of SCADA or EMS," the report said.

The report recommends utilities ensure the effectiveness of backup communications systems and incorporate that into emergency training, including determining the manpower and tools necessary to collect information and maintain operational awareness without SCADA.

"Participants expected that dependency on interpersonal communications would significantly increase in performing system restoration in the absence of SCADA, and that any unavailability of interpersonal communications would further hamper system restoration," the report said.

It also recommended considering the shelf life of onsite fuel for backup generators and backup area control error applications.

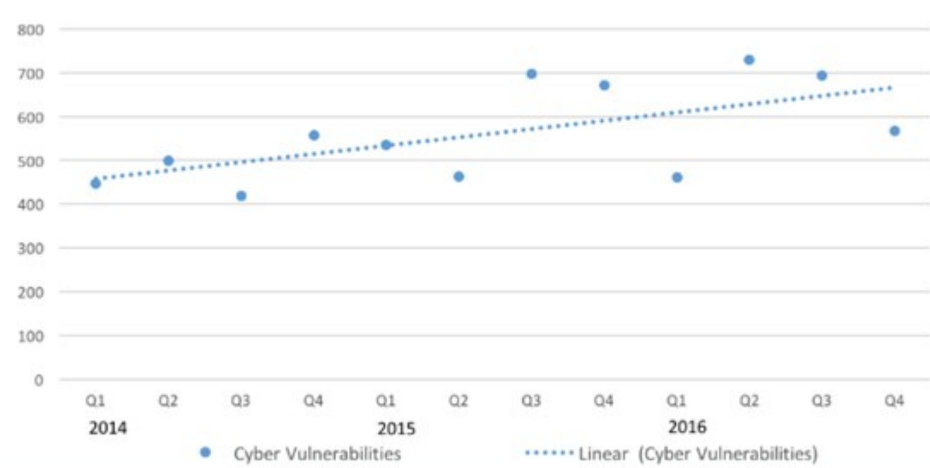
Participants reported that their emergency procedures were flexible and robust enough to handle a wide range of changing circumstances. All plans involve development of multiple restoration paths and islands.

"If a SCADA system(s) is still unavailable as system restoration progresses, the participants may adjust their restoration strategy accordingly, e.g., restore areas within the reliability coordinator footprint but remain operating as separate islands within the reliability area, holding off synchronizing to form a larger island and/or interconnecting with the rest of the interconnection, thereby reducing the risk of an outage to a larger restored area," the report said.

In the event of a cyber event that disables SCADA or EMS, participants indicated it would be more reliable to remain islanded "until associated risks are alleviated" in order to avoid repeated widespread blackout.

The increased reliance on interpersonal communications did raise concerns about satellite and cellular phone functionality during emergencies, as usage by other organizations would undoubtedly increase, limiting available bandwidth and exacerbating voice delays.

Most participants stressed the importance of owning and maintaining their own backup wireless systems for emergency field communication — a practice followed by all the participants.



Global cyber vulnerabilities | *NERC*

COMPANY BRIEFS

Russell Stokes Named CEO of GE Power

Stokes

General Electric has named Russell Stokes as president and CEO of GE Power, effective July 3. He will succeed Steve Bolze, who announced his decision to retire.

Stokes, who is presently president and CEO of GE Energy Connections, will lead the integration of the legacy GE Power and Energy Connections businesses into the GE Power unit.

Stokes is a 20-year GE veteran. Prior to his current role, he served as president and CEO of GE Transportation. He has held senior posts in GE Lighting and GE Aviation, and across functions including finance, sourcing, services and operations.

More: *Boston Business Journal*

Patricia Vincent-Collawn Elected as First Woman Chair of EEI Board

Vincent-Collawn

Edison Electric Institute members have elected PNM Resources CEO Patricia Vincent-Collawn as chairman of the board. She is the first woman elected to that post.

The industry group announced the decision at its annual convention in Boston last week. Vincent-Collawn replaces Southern Co. CEO Tom Fanning.

Also elected as vice chairmen were Exelon CEO Chris Crane, Berkshire Hathaway Energy CEO Greg Abel and Duke Energy CEO Lynn Good.

More: *Edison Electric Institute*

Duke Insurers Say Coal Ash Claims not Covered

Former insurers sued by Duke Energy to cover more than $1 billion in coal ash contamination costs say the claims are not covered because the company knowingly risked groundwater contamination.

Duke, which has been self-insured since 1986, contends that 57 policies issued by 30 insurers between 1971 and that time cover

current damages from groundwater contamination.

The company is counting on the insurance money to reduce charges to its customers for an anticipated $5.2 billion in costs to clean up its ash ponds in the Carolinas.

More: *Triad Business Journal*

AMP Chief of Market Regulatory Affairs Wins Employee Award

AMP President/CEO Marc Gerken (left) presents the 2017 AMP DNA Award to Chris Norton. | *AMP*

American Municipal Power named Chris Norton, director of market regulatory affairs, as the recipient of this year's DNA Award for advancing AMP's "vision and mission." Norton, who has been with AMP since 1998, was selected from nominees identified by coworkers.

"Chris is very integral to what we do," AMP CEO Marc Gerken said in a statement. "He's very innovative and makes suggestions that save our members a ton of time and money."

Ed Tatum, AMP's vice president of transmission, praised Norton's expertise on PJM and MISO market rules and operational requirements. "Chris is a team player. … He is cooperative, collaborative and an innovative thinker. Once a decision is made, Chris is quick to act and implement," Tatum said. "We all need a little Norton in our DNA!"

More: *American Municipal Power*

Route of the Energy East Pipeline | *TransCanada*

TransCanada Asks State Dept. to Place Pipeline App on Hold

TransCanada has asked the U.S. State Department to put its permit application for its Upland Pipeline on hold so that it can better align the timing with its proposed Energy East Pipeline System.

The Upland Pipeline, which would originate in North Dakota, would transport Bakken crude to Canadian markets as well as refineries on the U.S. East Coast by connecting with Energy East.

Energy East is under review by Canadian regulators, a TransCanada spokesman said.

More: *Bismarck Tribune*

Goldman Sachs Signs PPA for Wind Energy with NextEra

Goldman Sachs Group has signed a long-term power purchase agreement with a subsidiary of NextEra Energy Resources that will enable the investment and development of a new 68-MW wind project in Pennsylvania.

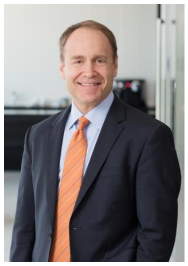
The finance company previously set a goal of achieving 100% renewable power for its global electricity needs by 2020.

The agreement is a collaborative effort between Goldman Sachs' commodities trading group, J. Aron, and its Corporate Services and Real Estate department. J. Aron is providing commodity risk management and commercial expertise for the transaction.

More: *Goldman Sachs*

FEDERAL BRIEFS

Holmstead Expected to be Named EPA No. 2, Sources Say


Holmstead

Jeff Holmstead, a former top EPA official under President George W. Bush, is expected to be appointed as EPA's deputy administrator, according to two sources familiar with the decision-making process.

Holmstead presently is a partner at law and lobbying firm Bracewell, which lobbies EPA on behalf of oil refineries seeking to change the types of companies that must comply with a federal ethanol mandate. Until recently, he was a registered lobbyist on EPA and Energy Department issues.

Holmstead has said EPA should not review the scientific findings that are the legal basis for the Obama-era carbon regulations that Administrator Scott Pruitt is working to dismantle.

More: *Axios*

171 House Democrats Condemn Trump's Exit from Paris


Schneider

On Friday, 171 House Democrats introduced a nonbinding resolution condemning President Trump's withdrawal from the Paris Agreement.

The resolution cites the public health, national security, economic and other threats of climate change and asks Trump to rejoin the agreement as soon as possible.

Rep. Brad Schneider of Illinois led the resolution, with nearly nine out of 10 House Democrats acting as cosponsors.

More: *The Hill*

BPA Keeps Montana Transmission Fee

The Bonneville Power Administration has refused to drop a $2/MWh transmission fee that opponents say prevents renewable energy generated in Montana from being competitive in the Pacific Northwest.

The fee, which applies to a 90-mile stretch between Townsend and Garrison, results in some power companies paying double to move electricity out of the state. It adds millions of dollars to the cost of electricity from the Colstrip power plant and could affect the prospects for the Clearwater Wind farm for selling its power into Washington state.

Montana's Republican-controlled House and Washington state's Democratic-controlled House both support dropping the charge.

More: *Billings Gazette*

House Panel Passes Bill Lifting Nuclear Tax Credit Deadline

The House Ways and Means Committee passed a bipartisan bill Thursday lifting the requirement that nuclear plants be placed in service by 2020 to receive the power production tax credit.

The bill, which was passed by a voice vote, also allows public and nonprofit entities to transfer credits to other partners on the facilities.

Several lawmakers from both political parties said they want the committee to additionally pass legislation extending tax credits for renewable energy resources.

More: *The Hill*

Lawmakers Advance Yucca Mountain Nuclear Waste Bill

The House Energy and Commerce subcommittee on environment passed a bill Thursday that would speed up permitting for a nuclear waste depository at Yucca Mountain in Nevada.

The bill, which would give the federal government authority to issue air permits, bypasses Nevada's objections to the project.

The bill also authorizes interim and private storage as options until Yucca Mountain is fully licensed and prepared to receive shipments.

More: *The Hill*; *Las Vegas Review-Journal*

Court Orders more Analysis of Dakota Access Pipeline

A federal judge last week ordered the Trump administration to conduct additional environmental analysis of the Dakota Access oil pipeline.

U.S. District Judge James Boasberg ruled that in its review of the pipeline, the U.S. Army Corps of Engineers "did not adequately consider the impacts of an oil spill on fishing rights, hunting rights or environmental justice, or the degree to which the pipeline's effects are likely to be highly controversial."

Whether the pipeline must cease operations is a separate issue, subject to further legal briefing, according to the court's order. Another hearing is scheduled for later this month.

More: *Los Angeles Times*

Reps. Tell Pruitt that Trump Budget Cuts EPA Too Deeply

Lawmakers told EPA Administrator Scott Pruitt on Thursday they won't approve the Trump administration's proposed 30% cut in his agency's budget.


Calvert

At a hearing of the House Appropriations Committee's subcommittee overseeing EPA spending, members of both parties expressed opposition to the cuts and pressed Pruitt to defend them. "In many instances, the budget proposes to significantly reduce or terminate programs that are vitally important to each member on this subcommittee," said Chairman Rep. Ken Calvert (R-Calif.), citing the proposed elimination of a local air quality grant program and cuts to the Superfund and a program to reduce diesel emissions.

Pruitt insisted the agency would be able to carry out its "core" functions despite the cuts. "I believe that we can fulfill the mission of our agency with a trimmed budget, with proper leadership and management," he told lawmakers.

More: *The Hill*

Wind, Solar Hit 10% Mark in March

Wind and solar generators produced 10% of the electricity generated in the U.S. for the

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FEDERAL BRIEFS

Continued from page 34

first time in March, according to the Energy Information Administration.

The EIA's monthly power report for March found that wind produced 8% of power for the month with solar generating another 2%. The agency expects that the two sources topped 10% for April as well but predicts their generation will fall below that mark during the summer.

The two sources combined for 7% of electric generation in 2016, according to EIA.

More: *Energy Information Administration*

Study: Power Plant Emissions Fall For 10 Years While GDP Rises

A report released Wednesday looking at the 100 largest generators in the U.S. found that carbon dioxide emissions fell between 2005 and 2015, while gross domestic product grew steadily over the same period.

"The decoupling of economic growth from emissions growth is really encouraging," said Dan Bakal, director of electric power for Boston-based sustainability advocacy group, Ceres, which sponsored the study.

In 2015, the energy sector's carbon dioxide emissions were 20% below 2005 levels as companies shifted away from coal in favor of renewable sources and natural gas. In the time frame of 2000 to 2015, GDP rose by 33%, according to the report.

More: *InsideClimate News*

Trump Administration Tries to End Youths' Climate Lawsuit

The Trump administration filed a rare petition Friday with the 9th Circuit Court of Appeals to review a federal judge's November decision refusing to dismiss an environmental lawsuit filed by a group of youths, now ages 9 to 21.

In the 2015 suit, the youths claim the federal government and energy companies are violating their "constitutional rights to life, liberty and property" by failing to rein in greenhouse gas emissions and curb fossil fuel use.

The "writ of mandamus" is an attempt by the administration to leapfrog over a lower court in hopes of finding a more favorable ruling in a higher court. A mandamus is considered a "drastic and extraordinary" remedy reserved for "really extraordinary causes," Justice Anthony Kennedy wrote in a 2004 majority opinion.

More: *Mashable*

ANALYSIS: Senate Questions to FERC Nominees Reflect Democratic Wishlist

Continued from page 3

role."

Questions by Sanders and others indicated their desire for FERC to slow down its approvals of gas pipelines. They asked the nominees if they agreed with former Chairman Norman Bay's call for a review of the cumulative environmental impacts from Marcellus and Utica shale drilling. (See *Bay Calls for Review of Marcellus, Utica Shale Development*.)

While Chatterjee's answer was anodyne — committing to working with his colleagues in reviewing commission policies — Powelson was more forceful in his answer.

"I respectfully disagree with that recommendation," he said. "As a Pennsylvania state regulator … I believe that this issue would be better addressed at the state level. State environmental regulators and state public utility commissions are closer to the issues of shale gas development and are better equipped than the federal government to undertake such an assessment."

Public Participation

Senators also expressed concerns about potential barriers to public participation in FERC's processes.

"FERC is incredibly complicated, and the barrier to entry for someone to simply understand FERC proceedings, much less to participate, is extremely high," Sanders said. "Stakeholders with considerable financial resources can participate, but everyone else is effectively excluded."

Both Sanders and Franken asked about legislation that would create an Office of Public Participation and Consumer Advocacy at the commission, an issue earlier raised by public interest group Public Citizen. (See *Public Interest Groups Cry Foul over Technical Conference, RTO Transparency*.)

Both nominees wrote that they would "work with my colleagues to identify further steps that FERC could take to make its proceedings and processes more accessible to the public."

But Powelson also said, "I do not believe that the creation of such an office at FERC is necessary. In my view, the public comment process at FERC provides all interested parties with the ability to participate in the process and express their positions on issues."

Duckworth also spoke up for public interest groups, saying they believe they have "an extremely limited voice in RTO stakeholder discussions, and RTO actions taken behind closed doors seem to be condoned by FERC."

Virginia Democratic Sens. Tim Kaine and Mark Warner have introduced legislation that among other provisions would mandate public comment meetings in every locality in the path of a proposed interstate gas pipeline. The bill is in response to complaints in the state about the limited opportunity for the public to provide feedback.

Republican Rep. Morgan Griffith, also from Virginia and a member of the House Energy and Commerce Committee, introduced a similar bill in the House.

State Briefs

ARIZONA

9th Circuit Clears SolarCity Lawsuit Against SRP

In a decision that could impact efforts by state utilities to increase costs to rooftop solar customers, a federal appellate court ruled last week that SolarCity's anti-trust challenge to Salt River Project's pricing system should be allowed to proceed.

According to SolarCity, solar customers, who can't completely connect from SRP's grid, saw a 65% rate increase, compared with a 3.9% increase for residential customers who buy all their power from SRP. The 9th U.S. Circuit Court of Appeals said it did not have authority to consider the finding of a trial judge in Phoenix who allowed the case to go forward.

More: *Capitol Media Services*

IOWA

ETP Proves it has Liability Insurance for Dakota Access

Energy Transfer Partners filed documents with state regulators last week proving it has not had any lapse in coverage in its liability insurance to protect the public from possible oil spills and leaks from its Dakota Access Pipeline.

On Friday, the Utilities Board issued a directive reprimanding the company for failing to comply with a state order to demonstrate that it is carrying at least $25 million in liability insurance.

The company said it has a general commercial liability insurance policy and four excess liability policies that provide total coverage of $50.1 million. It said it acquired new policies on May 15 to replace its original policies, but it did not receive full copies to file with regulators until June 12.

More: *The Des Moines Register*

MINNESOTA

EV Owners Will Pay Maintenance Surcharge Starting in 2018

Electric vehicle owners in the state will be hit with an annual $75 road-maintenance surcharge approved by lawmakers, effective in January.

The charge, which is intended to make up for lost gas tax revenues, is expected to generate $40,000 in its first two years, with revenue estimates more than doubling in the two years after that.

Rep. Paul Torkelson, chairman of the House Transportation Finance Committee, said the fee is about EV owners doing their fair share to maintain the road system.

More: *The Associated Press*

Commerce Dept. Recommends Reducing Electric Rates

The state Department of Commerce is recommending that regulators not grant Minnesota Power's request for a rate increase, but instead require the utility to decrease its electric rates.

Last November, Minnesota Power filed a request with the Public Utilities Commission for a $55.1 million annual rate increase, or about 9.1% overall, beginning Jan. 1, 2017. In March, it lowered the proposed increase to $38.8 million, or about 6.1%. The department is recommending that rates be reduced by $16.7 million, or about 2.6% overall.

More: *Aitkin Independent Age*

MONTANA

Coal Production May Hit 10-Year Low

For the first four months in 2017, the state's coal mines produced one-third less coal compared with two years ago, according to industry records. The decline puts the state on track for the worst production period in at least a decade.

Through April, the state produced 9.8 million tons of coal, which tracks with the same period in 2016, but falls short by 4 million tons from two years ago.

Bud Clinch, of the Montana Coal Council, cited frozen-over shipping lanes in the Great Lakes and a threat by Canadian Prime Minister Justin Trudeau to ban U.S. coal from British Columbia's Westshore Terminal in response to a tariff imposed by President Trump on Canadian softwood lumber in April as factors that worked against production.

More: *Billings Gazette*

NEVADA

Governor Signs Bill Reinstating Net Metering

Gov. Brian Sandoval signed a bill Thursday reinstating net metering, prompting the return of Tesla's SolarCity unit and Sunrun to the state after an 18-month absence.

The state discontinued net metering at the end of 2015, which led to SolarCity and Sunrun pulling out.

Tesla Chief Technical Officer JB Straubel said the company would resume selling solar systems in the state immediately.

More: *Reuters*

OHIO

Wind Advocates Push to Loosen Restrictions on Turbine Siting

Wind energy advocates are pushing legislators to revise a 2014 state law restricting the siting of wind turbines.

Sen. Cliff Hite, whose district includes several large wind farms, has proposed a budget amendment that would require a 600-foot setback between a turbine and the nearest property line. In 2014, Senate leaders inserted an amendment into an unrelated bill that changed the setback to about 1,300 feet from the previous requirement of 550 feet.

Wind business leaders said the law is hindering development of new wind farms by preventing a sufficient number of turbines in a project. Opponents of the proposal say it would interfere with the property rights of people who live near wind farms.

More: *The Columbus Dispatch*

OREGON

Report: Burning Portland's Trash for Electricity OK

A recent report commissioned by the Portland metropolitan area's regional government raises no significant concerns about the health or environmental risks of burning the city's garbage to produce electricity.

Continued on page 37

State Briefs

Continued from page 36

Metro asked consultants to compare the impacts of garbage burning at a waste-to-energy incinerator in Brooks with maintaining the status quo of sending garbage to a landfill in Arlington, whose contract comes up for renewal in 2019. The report found burning the garbage would generate 13 MW of electricity — 10 times the amount of electricity available from processing waste at the landfill — but using the landfill would result in fewer carbon emissions.

More: Portland Tribune

VIRGINIA

Proposed Legislation Promotes Pumped Storage


Griffith

U.S. Rep. Morgan Griffith (R) has introduced legislation that would complement state-level efforts to advance closed-loop pumped storage hydropower in the state's coalfield counties.

The bill would allow FERC to impose licensing conditions when necessary to protect public safety and, when reasonable, economically feasible and essential to protect fish and wildlife resources. Earlier this year, Democratic Gov. Terry McAuliffe signed into law legislation seeking to spur development of the technology.

According to Griffith, the state's abandoned mine lands already have much of the necessary infrastructure in place, and sites in the Southwest part of the state are especially attractive because they use clean, non-acidic water.

More: Bluefield Daily Telegraph

Dominion's James River Crossing Wins Tentative Army Corps Nod

The U.S. Army Corps of Engineers is issuing a conditional permit for Dominion Energy's controversial high-voltage transmission line across the James River but won't issue a final permit until the company obtains approvals from the Virginia Marine Resources Commission and water quality regulators at the state Department of Environmental Quality.

The Corps is not requiring any changes to the route of the $180 million overhead line or to the mitigation plan proposed to address its impact on nearby historic sites.

Dominion says the line is needed to ensure reliability on the Virginia Peninsula and that the area faces the risk of rolling blackouts without it. Opponents complain the line will desecrate historic sites and views on the James River and say the utility is exaggerating the reliability risk.

More: Daily Press

WASHINGTON

City Council Calls Upon Puget Sound Energy to End Coal Use

The Seattle City Council unanimously passed a resolution last week calling upon Puget Sound Energy to end it use of coal by 2025.

PSE, which provides electricity to most households in the Puget Sound region outside Seattle, just began negotiating a contract with the coal-burning Colstrip power plant in Montana that would be effective through 2029. The contract includes provisions for ending the relationship.

The council's resolution also calls for the city to abide by the Paris Agreement.

More: Curbed

RTO Insider
Your Eyes and Ears on the Organized Electric Markets
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