

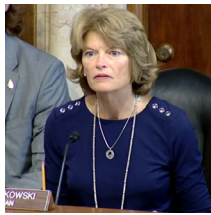


Senate Nuke Development Bill May Hinge on Waste Issue

By Michael Brooks

A bipartisan U.S. Senate bill intended to speed development of the next generation of nuclear reactors appears to have broad support, but passage may hinge on the fate of several other bills in the chamber that would address the long lingering issue of building a permanent repository for spent nuclear fuel.

The Nuclear Energy Leadership Act (NELA) ([S.903](#)), reintroduced by Sen. Lisa Murkowski (R-Alaska) on March 27, is co-sponsored by 17 senators — nine Republican, eight Democratic — including presidential candidate Cory Booker (D-N.J.). The bill was first introduced



Sen. Lisa Murkowski

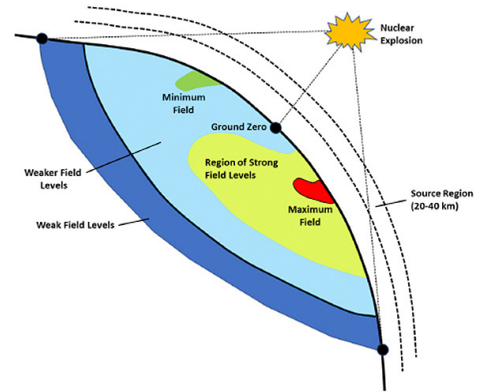
in September, toward the end of the previous session of Congress, but the Senate took no action on it.

The bill would direct the Department of Energy to:

- Enter into at least one long-term power purchase agreement (10 to 40 years) by the end of 2023 with a commercial nuclear reactor that was licensed by the Nuclear Regulatory Commission after 2018, giving special consideration to “first-of-a-kind or early deployment nuclear technologies”;
- Construct at least two advanced nuclear reactor demonstration projects by the end of 2025, and at least two more (but no more than five) by the end of 2035;

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EPRI Report Downplays Worst-case EMP Scenario



Example of the area affected by E1 EMP resulting from a high-altitude nuclear explosion. (p.3) | *Electric Power Research Institute*

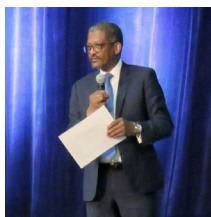
WECC Summit Explores Rapid Change in the West

By Hudson Sangree

SCOTTSDALE, Ariz. — The challenges facing the national and Western grids sound like the stuff of movie thrillers.

Speakers at this year’s Western Reliability Summit, hosted by the Western Electricity Coordinating Council, said massive storms caused by climate change could cut off power for days or weeks.

“We ain’t seen nothing yet with respect to hurricanes,” David K. Owens, retired head of the Edison Electric Institute, said in his keynote address. Owens worked to restore power to Puerto Rico after Hurricane Maria in 2017.



David K. Owens | © RTO Insider

The most significant hurricanes in history, in terms of duration of blackouts, have occurred

Continued on page 7

Texas ROFR Legislation Pits Incumbents, Transcos

By Tom Kleckner

Fast-moving Texas legislation that would give incumbent utilities the right of first refusal (ROFR) to build transmission projects in the state remains on the brink of passage, though its days may be numbered.

[House Bill 3995](#), which was voted 11-0 out of the State Affairs Committee in April, was scheduled to be taken up by the House of Representatives last week. However, the House adjourned Friday without taking further action on the bill. It faces a May 9 deadline for passage.

Its companion bill, [Senate Bill 1938](#), cleared the Senate on April 17, with all 31 members voting in favor. Because the bills are identical, should HB 3995 pass the House, it would only require the governor’s signature to become law — and become effective immediately, thanks to an “emergency rider.”

Texas officials often boast of the state’s 17-year-old deregulated electricity market as

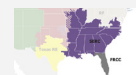
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Editor’s Note: We’re in the Room in NEPOOL!



RTO Insider’s Michael Kuser before attending his first NEPOOL meeting (p.20) | © RTO Insider

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Environmental Groups Divided on Cardinal-Hickory Creek Line
(p.25)



NYISO Grid at ‘Inflection Point,’ Report says
(p.30)

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This is a preview of ERO Insider, a new publication providing exclusive coverage of NERC and the Regional Entities that form the Electric Reliability Organization. Pricing and other details will be coming later this spring. For now, email any feedback on our coverage to EROInsider@RTOInsider.com.

EPRI Report Downplays Worst-case EMP Scenario Nuclear Detonation Could Cause Multistate Outage

By Rich Heidorn Jr

A utility-funded study has concluded a high-altitude nuclear explosion could cause a multi-state electric outage but not the nationwide, months-long blackout some observers have warned of.

The findings are contained in a three-year study by the Electric Power Research Institute on the impact of a high-altitude electromagnetic pulse (HEMP).

Such an attack could result in a multi-state outage, EPRI acknowledged on April 30, but it said shielded cables, fiber optics, surge protection, enhanced grounding and modifications to substation control houses could reduce the threat.

Although the report did not provide any cost estimates for the mitigation plans, project manager Randy Horton said through an EPRI spokesman that costs could range from \$500,000 to \$2 million per substation.

EPRI said it conducted the report "because of the extreme differences in views among experts regarding the potential impacts" of a HEMP caused by the detonation of a nuclear weapon 30 km or more above the earth's surface.

Under the scenarios evaluated by EPRI, "impacts such as regional disruption or damage to DPRs [digital protective relays] and regional voltage collapse could be experienced," the researchers said. "Research findings do not support the notion of blackouts encompassing the contiguous United States and lasting for many months to years."

EPRI's conclusions were dismissed as "junk science" by the *Secure the Grid Coalition*, a group of former federal officials that contends the research is understating the risk. "Enemies of this country have doctrines and capabilities that make EMP attacks anything but the 'low-probability' threat that underpinned the EPRI report's don't-worry, be-happy effort to minimize it," the group said.

The report comes little more than a month after President Trump signed an *executive order* requiring the government to coordinate its efforts on EMPs. The order directs the secretary of Homeland Security and other officials to identify the critical functions and infrastructure systems that could be disrupted by EMPs within 90 days.

Generation not Studied

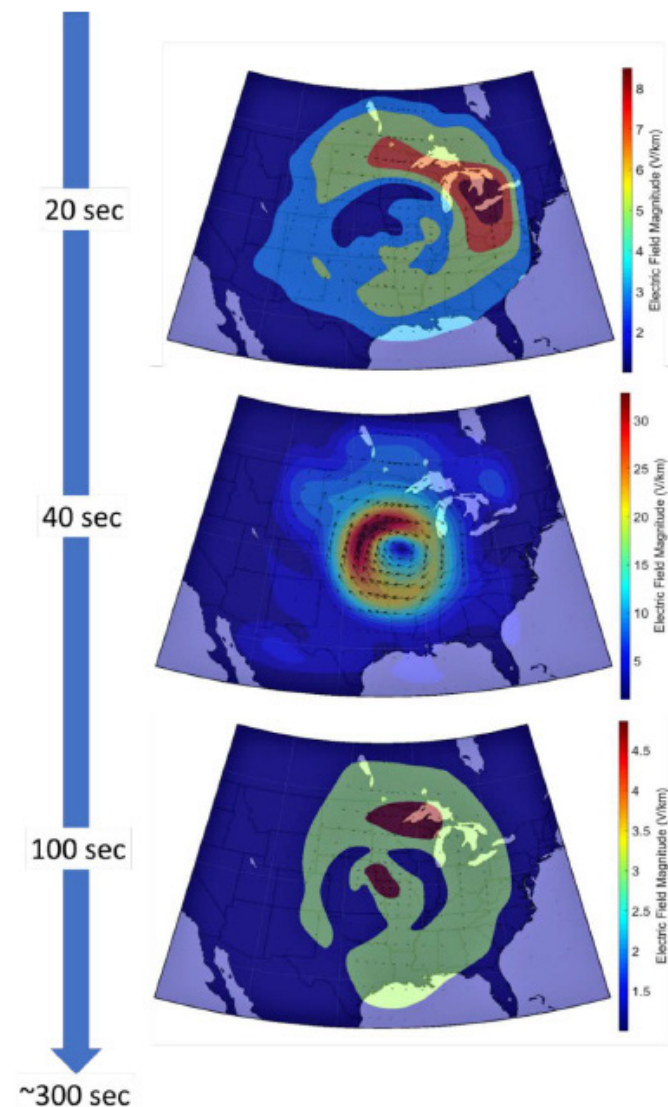
EPRI's report, which incorporated research from the Department of Energy's national labs and collaboration with the Defense Threat Reduction Agency and the Electricity Subsector Coordinating Council (ESCC), was funded by some 60 utilities.

It focused on the potential impacts of a HEMP attack on the transmission system and how overhead transmission lines, substations and switchyards could be hardened. It did not look at the potential effects of HEMP attacks on "generation facilities, nuclear reactors, distribution systems, loads or other key elements or infrastructure sectors," EPRI said, recommending those subjects for further research.

The study looked at the impacts of three "hazard fields" that can be produced by a nuclear detonation, based on the weapon's yield and the height of the explosion above the surface:

- The early time component (E1 EMP), an intense, short-duration electromagnetic pulse characterized by a "rise time" of 2.5 nanoseconds and amplitude of up to 50 kV/meter on the ground;
- The intermediate time component (E2 EMP), an extension of the E1 EMP with an electric field pulse amplitude of about of 0.1 kV/m and a length of one microsecond to about ten milliseconds;
- The late time component (E3 EMP), a very low frequency (below 1 Hz) pulse with amplitude of tens of V/km lasting from one second to hundreds of seconds. The event would be similar to severe geomagnetic disturbances (GMDs) caused by solar flares, which can last several days.

The area exposed to E1 EMP fields would be limited by the line of sight



Maps of the instantaneous geoelectric field magnitude of an E3 EMP at 20, 40 and 100 seconds | *Electric Power Research Institute*

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from the weapon to the horizon; a detonation at 200 km could affect a circular area of 3 million square miles — most of the continental U.S. and portions of Canada and Mexico — albeit at different levels of severity. The pulse can “couple” to overhead lines and cables, exposing connected equipment to voltage and current surges, potentially damaging DPRs, communication systems and supervisory control and data acquisition (SCADA) systems.

EPRI said E1 EMPs would cause “moderate” damage based on modeling from Los Alamos National Laboratory of up to 25 kV/m at the most severe location on the ground. Increasing the pulse to 50 kV/m resulted in “more severe” damage.

“Based on the assumptions made in the assessments, it was estimated that approximately 5% of the transmission line terminals in a given interconnection could have a DPR that is disrupted or damaged by the nominal E1 EMP environment that was simulated, whereas approximately 15% could be impacted by the scaled (up to 50 kV/m at the most severe location on the ground) E1 EMP environment,” the report said.

Although its testing did not indicate E1 EMP impacts alone would cause immediate, inter-connection-scale disruptions, “this finding is not conclusive due to uncertainties regarding how damaged DPRs might respond during an actual event ... or how potential E1 EMP damage to generator controls and other systems such as automatic generation control (AGC), not included as a part of this study, might affect the long-term operation of the grid,” EPRI said.

Mitigation Measures

The researchers said their modeling and laboratory testing of DPRs indicated design changes could provide adequate mitigation up to 50 kV/m:

- Shielded control and signal cables with proper grounding;
- Low-voltage surge protection devices or filters;
- Use of fiber optics-based protection and control systems;
- Modifications to substation control houses to enhance their electromagnetic shielding; and
- Grounding and bonding enhancements.

It also recommended transmission operators maintain supplies of replacement DPRs and other critical assets.

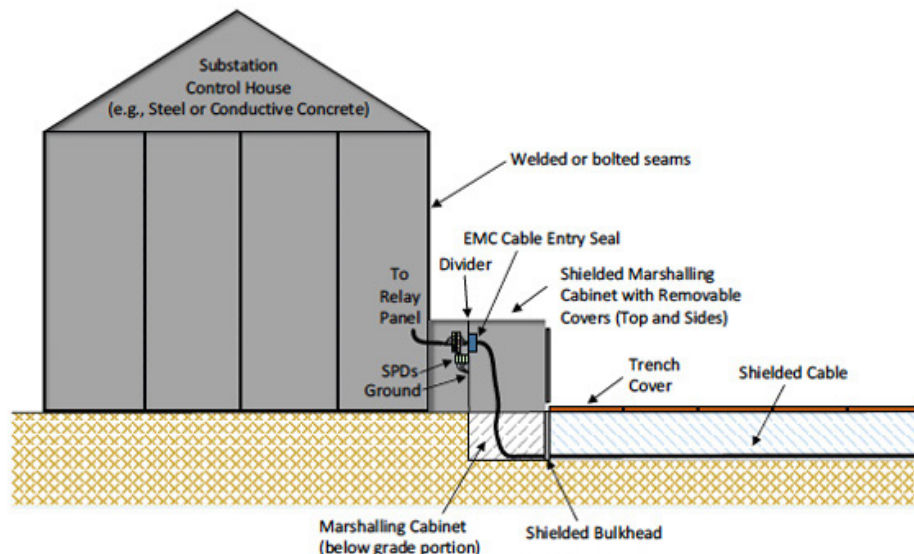


Illustration of a substation control house hardened against an E1 EMP | *Electric Power Research Institute*

E2 EMPs can couple to overhead lines or cables through the air, like E1 EMPs. “This coupling mechanism is similar to how the field created by a nearby lightning strike couples to an overhead transmission line,” EPRI said. But because of the low amplitude, they are unlikely to affect the transmission system. “Thus, no specific mitigation options were identified as a part of this research,” EPRI said.

But it said E2 EMPs “may be a threat for assets that operate at lower voltages (e.g., low-voltage inverters connected to rooftop PV).”

The low-frequency geomagnetically induced currents (GICs) resulting from E3 EMPs can cause magnetic saturation of transformer cores, causing transformers to generate harmonic currents, absorb reactive power and experience heating in windings and structural parts. “Potential impacts of E3 EMP on the bulk power system can include voltage collapse (regional blackout) and transformer damage due to additional hotspot heating,” EPRI said.

EPRI said E3 EMPs alone could result in a multi-state blackout, “but immediate, widespread transformer damage due to hotspot heating from part-cycle saturation is not expected to occur.”

Researchers said mitigation options used for GMD events would also be effective for E3 EMPs, including:

- Preventing protection system misoperations by modifying protection and control schemes to make them resilient to harmonics and

system imbalance;

- Blocking or reducing the flow of GICs;
- Automatic removal of some shunt reactive power compensation devices such as shunt reactors and use of under-voltage load shedding (UVLS); and
- Maintaining supplies of spare large power transformers and high-voltage circuit breakers.

EPRI’s analysis of the combined effect of E1 and E3 EMPs indicated DPRs damaged by surges would not cause the immediate disconnection of transmission lines but would prevent the DPRs from performing their protection and control function.

“Significant damage to DPRs and other controls from E1 EMP would be expected to degrade recovery efforts and longer-term viability of controlling system frequency due to potential damage to AGC and other ancillary functions,” EPRI said. “These latter effects could impact the long-term stability (voltage and/or frequency) of an area affected by the HEMP attack.”

Without hardening of the transmission system, “recovering from a HEMP-induced blackout may present operators with challenges that have not been experienced following previous blackouts from more traditional causes. These potential challenges are primarily related to unavailable, inoperable or damaged equipment and impaired situational awareness capability,”

Continued on page 6

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NPCC Sees Lower Summer Peak for 2019 Ontario Peak Growing

By Rich Heidorn Jr.

The Northeast Power Coordinating Council (NPCC) is projecting a summer peak demand of 103,548 MW in the week of July 28, a 0.6% reduction (589 MW) from last year, despite growth in Ontario.

“This continues an almost decade-long trend of overall flat or declining peak demand forecast due to energy efficiency and conservation initiatives, as well as the significantly increasing role of behind-the-meter PV resources in New England and New York,” NPCC CEO Edward Schwerdt said in a Thursday press release announcing the summer *Reliability Assessment*.

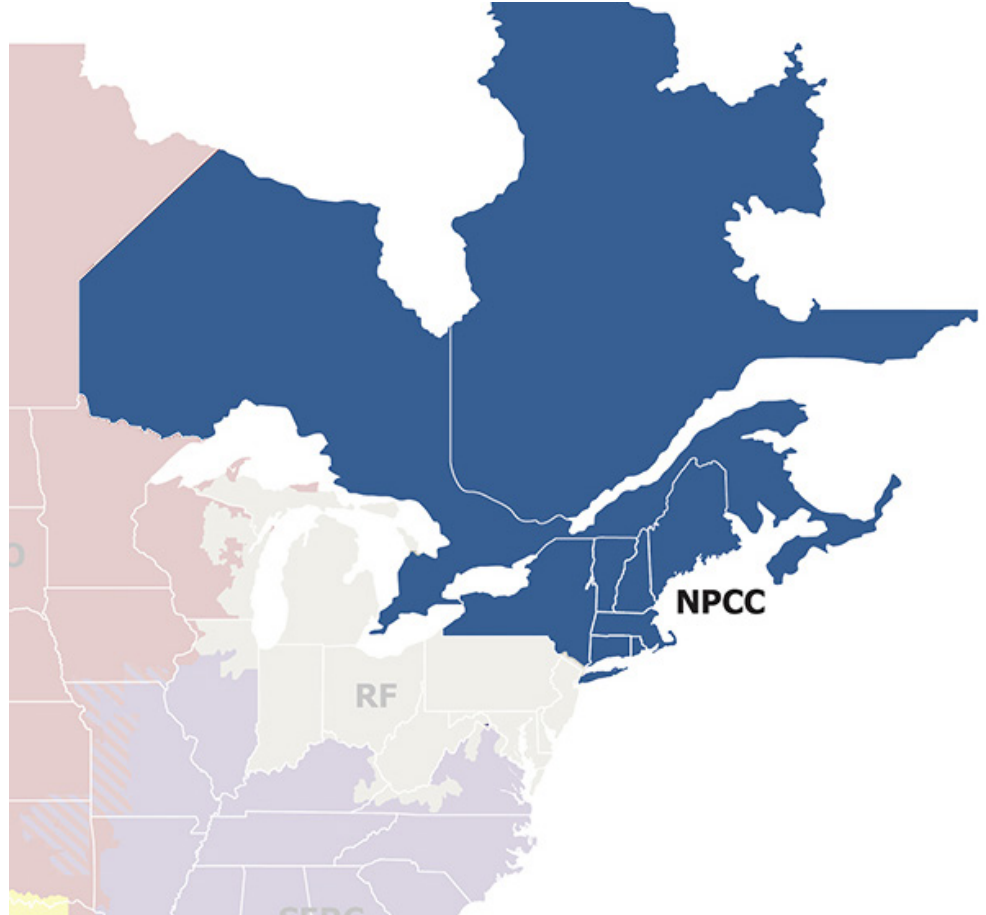
With the addition of 2,855 MW of net new capacity since summer 2018, NPCC forecasts a minimum operable capacity margin (spare operable capacity less transfer capability limitations) of 12,545 MW (12.2%) for the summer.

NPCC is the NERC regional entity for New England, New York, Ontario, Québec, New Brunswick and Nova Scotia. The U.S. represents 46% of NPCC’s net energy for load with Canada accounting for 54%. NPCC represents about 70% of Canada’s electric demand.

While New England and New York often hit their summer peaks together because of the proximity of their load centers, “there is some potential” for Ontario’s summer peak to occur at the same time, the report said. “Ambient weather conditions remain the most important variable in forecasting peak demand during the summer months,” it said.

The report included regional snapshots of the changes in generation since summer 2018 and the projected peaks for this year:

- New York added a net 127 MW, including 158 MW of wind, with 167 MW of coal generation retirements and 446 MW restored with the withdrawal of Selkirk 1 and 2’s mothball notice. NYISO projects a peak of 32,382 MW, a 522-MW drop from the summer 2018 forecast, because of state energy efficiency programs and the growth of BTM, including retail PV, combined heat and power, anaerobic digester gas, fuel cells and energy storage.
- New England added a net of 568 MW, including the dual-fuel Bridgeport Harbor



NPCC is the NERC regional entity for New England, New York, Ontario, Québec, New Brunswick and Nova Scotia. | NERC

expansion (510 MW), Canal 3 (333 MW) and Medway Peaker (208 MW). Wind and solar generation increased by 135 MW. Entergy’s Pilgrim nuclear plant (680 MW), Massachusetts’ only nuclear unit, is expected to retire by June 1. ISO-NE’s forecast peak is 25,323 MW, 406 MW below last year’s projection. The RTO cited demand reductions from energy efficiency, load management, passive demand response, distributed generation and BTM PV.

- Ontario’s generation increased by a net of 1,418 MW, including the Napanee gas-fired generator (985 MW), wind (375 MW), solar (98 MW) and hydro (16.4 MW). About 56 MW of gas-fired generation is retiring. Ontario’s Independent Electricity System Operator forecast a 103-MW increase in peak demand, to 22,105 MW. Conservation savings and distribution-connected generation are expected to partially offset

increased demand from economic and population growth.

- Québec and the Maritimes, both winter-peaking areas, will see a slight increase, with Québec adding 38 MW of biomass and losing 8 MW of other generation for a net change of 30 MW. Québec is forecasting a 471-MW increase in the peak, to 21,005 MW. The Maritimes expect a peak of 3,255 MW, up 20 MW from last summer.

Transmission, Pipelines

Although NPCC expects spare operable capacity (capacity above reserve requirements) of 19,884 MW during its coincident peak the week of July 28, limited transfer capability from Québec and the Maritimes will reduce the amount available to the rest of its territory to 14,954 MW.

Since last summer, NYISO has added the

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Cricket Valley 345-kV substation — on the Pleasant Valley-Long Mountain 345-kV tie line with New England — to serve the new Cricket Valley combined cycle generating station expected to begin operation after the summer.

Unlike in winter, ISO-NE does not expect natural gas deliverability issues to affect gen-

eration. The RTO also can call on 340 MW of active demand resources on the peak.

The RE said it foresees “no significant likelihood” of implementing operating procedures for resource shortages (voltage reductions, and reductions of 10- and 30-minute reserves) during the summer for the expected peak load,

a forecast based on the probability-weighted average of seven load levels simulated.

NPCC said operating procedures are available if needed to maintain reliability during severe system conditions and extreme heat simultaneously. The assessment also considered scenarios with extended unit maintenance; reductions in DR; reductions in the ability to import power from neighboring regions; transmission constraints; and widespread and prolonged heat waves with high humidity.

Geomagnetic Disturbances

The RE, which has had operating procedures since 1989 to respond to geomagnetically induced currents (GICs) from solar storms, said it expects “quiet levels” of solar activity for the summer.

“The solar coronal regions are stabilizing as the next solar minimum approaches, with fewer coronal holes and fewer extensions to lower solar latitudes that can sweep higher velocity solar winds toward the Earth,” NPCC said, while acknowledging that sunspot formations are difficult to predict.

While “these rogue events can and do occur,” the report said, “the odds of such an event during any particular week of the coming summer are very low.” ■



Entergy's 680-MW Pilgrim nuclear plant will shut down by June 1. | Entergy

EPRI Report Downplays Worst-case EMP Scenario

Nuclear Detonation Could Cause Multistate Outage

Continued from page 4

EPRI said.

Recovery Efforts

The study recommended transmission operators develop alternatives to their current step-by-step facility energization procedures, noting damaged equipment may interrupt cranking paths following a HEMP event.

“Because damage to large power transformers is expected to be minimal, recovery times following a HEMP-induced blackout would be expected to be commensurate with historical large-scale blackouts if robust E1 EMP protections are deployed such that E1 EMP impacts to equipment, situational awareness, SCADA and other infrastructures that support power system restoration are minimal,” it said.

Southern Co. CEO Thomas A. Fanning, co-

chair of the ESCC, said the report “greatly enhances our understanding of the potential impacts EMPs could have on our national energy grid.”

Scott Aaronson, the Edison Electric Institute's vice president for security and preparedness, said the report “enables electric companies to make science-informed decisions for developing, testing and deploying EMP-resistant grid components.”

“EPRI also tested mitigation strategies and was able to rule out options that don't work,” Aaronson added. “Multiple electric companies will be piloting those potential solutions to ensure new mitigation strategies do not impact other energy grid equipment or undermine or conflict with mitigation and protective measures that already are in place.”

The report said field testing of mitigation will be needed to avoid unintended consequences

and obtain “realistic cost data to inform future decision making.” EPRI said it has begun a new research effort to further evaluate the mitigation options.

Dissenting View

The Secure the Grid Coalition, which claims to have former CIA Director R. James Woolsey among its members, issued a [statement](#) blasting the EPRI report as a whitewash “reminiscent of past tobacco industry-underwritten efforts to have putatively independent ‘scientists’ disinform the public about the actual dangers of smoking.”

The group said EPRI made “faulty assumptions” about the damage EMPs would cause to transformers and SCADA systems and ignored “abundant data derived by the Pentagon, civilian agencies and government-sponsored studies.” ■

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WECC Summit Explores Rapid Change in the West

Continued from page 1

in the last 10 years, Owens said.

"The grid has got to be hardened," Owens said. "The grid has got to be smarter."

Others worried about cyberattacks from overseas.

"A guy in Nigeria can potentially take out your network and every one of your systems," Michael Lettman, a cybersecurity adviser with the U.S. Department of Homeland Security, told the utility executives and regulators in the audience.

And some envisioned a science fiction future when millions of electric vehicles and rooftop solar arrays will help power the West — and potentially contribute to reliability problems.

"We're going to see a much more dynamic supply and demand profile on our distribution grid" going forward, said Chris Campbell, senior director of grid modernization for Arizona's Salt River Project.

WECC CEO Melanie Frye said the once staid business of providing electricity is getting more tangled.

"I am in awe of the ever-increasing complexity of the world in which we're trying to deliver safe, reliable and secure electricity to our customers," Frye said in her concluding remarks.

WECC, charged by NERC and FERC with ensuring the reliability and security of the Western Interconnection, holds its yearly summit to let industry leaders air their thoughts.

This year's *summit* consisted of four panels that focused on cyber threats, transformational technology, the future of utilities, and changing norms and expectations among consumers and providers of electricity.

'Waiting for the Cyber 9/11'

In the panel on cybersecurity, speakers urged utilities to prepare for computer shutdowns by practicing their skills with pen and paper. "We've got to have ways to fall back manually," Lettman said.

Cybersecurity needs to be as commonplace as



About 100 people attended WECC's Western Reliability Summit in Scottsdale, Ariz., on May 1. | © RTO Insider

physical security for utilities. "Shaking hands with the FBI when you're under attack is a bad idea," he said.

Threats can come in the form of email attachments sent to employees. Workers need to be trained not to open files containing malicious software, he said. (See [Expert Sees 'Extreme Uptick' in Cyber Attacks on Utilities.](#))

Moderator David Godfrey, vice president of reliability and security oversight with WECC, asked panelists what they saw as the biggest cybersecurity concern in the next five years.

Lettman said attackers could hack into a secure network through an online device such as a baby monitor or a driverless car.

"Cyber Armageddon" had already occurred during the attacks on Ukrainian government ministries, banks and electric utilities in June 2017. He also cited the 2014 hack of Sony Pictures that U.S. officials blamed on North Korea.

Utilities should assume they will be the next target, Lettman said. "We are all now security people whether we like it or not."

Peyton Price, a Navy fellow with the Idaho National Laboratory, said it's important to understand that numerous smaller cyberattacks could damage the grid as much as one major attack.

"I think we're all waiting for the cyber 9/11 ...

[instead of] death by 1,000 cuts," he said.

Transformational Technology

In a panel titled "What is the Next Transformational Technology?" SRP's Campbell also recommended keeping up on "manual processes" in case of computer failure.

"As we depend more on technology, we need to be able to fall back when it's not working properly," he said.

He said he saw solar power and EVs as the major transformative technologies in Arizona and other parts of the West.

Utility-scale and rooftop solar will grow in importance in states flooded with sunlight, he said. The number of EVs is expected to increase exponentially, he said.

Mahesh Morjaria, vice president of development with First Solar, said he too believed solar would become a major force. It's mainstream and inexpensive now, 65 years after Bell Labs invented the first solar cell, he said.

Chris Schroeder, with the nonprofit Smart Electric Power Alliance, said he sees the ability to aggregate rooftop solar and home batteries as transformational. Newer subdivisions can be built with both components, and utilities can call on those resources during short periods of under- or oversupply hundreds of times per year, Schroeder said.



Melanie Frye | © RTO Insider

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Storage will be the biggest driver of change in coming years, said Kiran Kumaraswamy, vice president of market applications at Fluence Energy. It can siphon excess solar energy from the grid in times of surplus and inject it back into the grid at times of peak demand, he said. It can also be a local resource in areas with supply constraints, he said. (See [Calif. Needs Far More Storage to Decarbonize, Panelists Say.](#))

“With all of these things we see an incredible promise,” Kumaraswamy said.

Changing Norms

Three utility regulators from California, Oregon and Washington talked about reliability concerns as renewable energy becomes a bigger part of the supply mix and community choice aggregators multiply.



Ann Rendahl | @RTO Insider

Ann Rendahl, a commissioner with the Washington Utilities and Transportation Commission, said her state was on the verge of adopting a 100% clean energy mandate, as California, Nevada and other states have already done.

(See [Washington, Nevada Join 100% Clean Energy Movement.](#))

Keeping the grid reliable and ensuring resource adequacy at times of high demand in the West could prove problematic under those mandates, she said. “Washington is not an island.”



From left to right: Colin Cushnie, vice president of Southern California Edison; Jeff Guldner, president of Arizona Public Service; and Gregory Guthridge, an independent consultant, discussed the utility of the future with WECC CEO Melanie Frye. | @RTO Insider



A panel on transformational technology included (left to right), Chris Campbell, Salt River Project; Chris Schroeder, Smart Electric Power Alliance; Kiran Kumaraswamy, Fluence Energy; and Mahesh Morjaria, First Solar. It was moderated by Branden Sudduth, WECC. | @RTO Insider

In California, 19 CCAs now serve load, including the Los Angeles-area Clean Power Alliance with 1 million customers.

In 2016, investor-owned utilities served 90% of peak capacity load in California, state Public Utilities Commissioner Liane Randolph said. In 2019, IOUs will serve 66% of peak capacity load and CCAs will serve 25%, she said.

It remains uncertain if the CCAs, many of which are startups, can procure enough carbon-free energy to meet legal requirements and peak load, she said. (See [Calif. Lawmakers Reveal Growing Divisions Over CCAs.](#))

Wildfires, which devastated areas of California in the past two years, are the state’s biggest challenge to reliability, she said. (See [RC Transi-](#)

[tion, California Wildfires Will Occupy 2019.](#))

Utility of the Future

In a panel moderated by WECC’s Frye, utility executives and an independent consultant were asked, “What does the utility of the future look like?”

Jeff Guldner, president of Arizona Public Service, said customers will expect utilities to provide the clean energy they demand without wanting to understand the complexity of providing it — while keeping the lights on. Gluts of solar energy without sufficient storage will make that difficult, he said.

Utilities will have to become more customer-oriented, “like Amazon,” Guldner said. “Customers think about their utility like almost nothing.”

Independent consultant Gregory Guthridge said the relationship between utilities and their customers is bound to become “increasingly complex.”

Southern California Edison is working to meet California’s aggressive clean energy mandates, but meeting those goals while incorporating millions of EVs and rooftop solar arrays will be challenging, said Colin Cushnie, the utility’s vice president of power supply. (See [Calif. Gov. Signs Clean Energy Act Before Climate Summit.](#))

Cushnie said he worries California will have to deal with future resource deficiencies.

“That would be the thing that would keep me up at night — how to make all this stuff work.” ■

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FERC OKs SERC's Expansion into Florida

By Rich Heidorn Jr.

FERC on Wednesday approved the dissolution of the Florida Reliability Coordinating Council as a regional entity and SERC Reliability's expansion into the Sunshine State ([RR19-4](#)).

FRCC agreed in October 2018 to relinquish its role following NERC's determination that its REs — which are deputized to police reliability — should be separate from registered entities subject to NERC reliability standards.

In addition to serving as an RE, Tampa-based [FRCC](#) also has a Member Services division, which served as a reliability coordinator and planning authority. FRCC will continue to serve in those functions. "FRCC staff and members will continue to steadfastly pursue our vision to maintain a highly reliable and secure bulk power system for peninsular Florida," CEO Stacy Dochoda said in a [press release](#).

[SERC](#), based in Charlotte, N.C., is expected to take over FRCC's RE responsibilities July 1, with FRCC completing its "wind down" of those services by Aug. 31.

Some 37 registered entities in peninsular Florida east of the Apalachicola River will move to SERC, including large utilities Tampa Electric, Florida Power & Light and Duke Energy Florida and small municipal utilities serving Key West and the city of Bartow. (SERC already serves the panhandle west of the Apalachicola.)

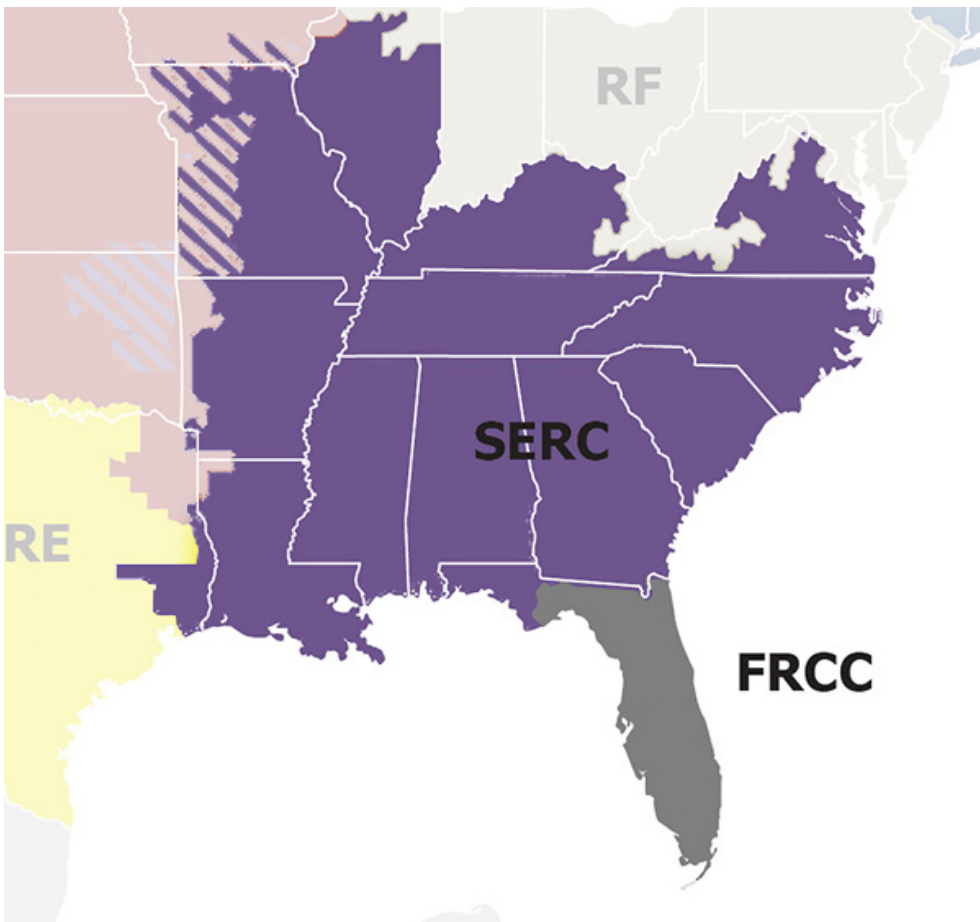
SERC is revising its bylaws to expand its Board Executive Committee from 12 to 15 members and divide committee members into two groups with staggered, two-year terms.

SERC expects to add 17 to 21 full-time equivalent staff members to handle the increased workload. NERC and the two REs will use FRCC's available cash as of July 1, its third and fourth quarter 2019 assessments, and a possible special assessment of up to \$630,000 to fund the transition.

FERC also approved a request to allow use of any FRCC penalty funds submitted to NERC between July 1, 2018, and July 1, 2019, toward the transition costs. Penalties submitted between July 1 and Dec. 31 or not otherwise applied to the transition will be reimbursed to FRCC entities on a pro rata basis.

Answering Questions

SERC, which held its regular second-quarter

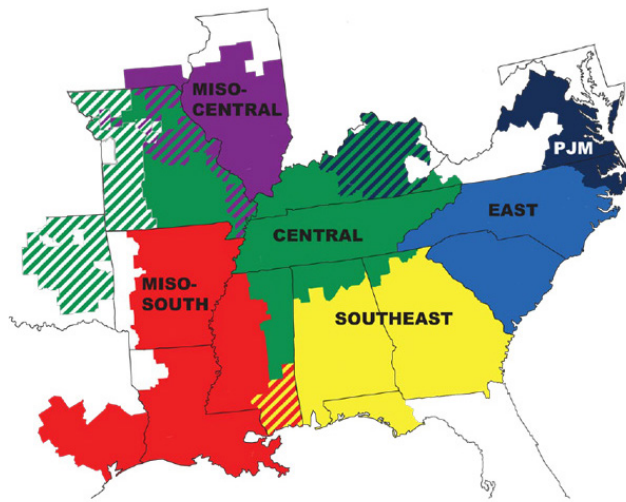


SERC Reliability will expand its regional entity function to peninsular Florida with the dissolution of FRCC's role on July 1. | NERC

"Open Forum" [webinar](#) Monday, has published a list of [frequently asked questions](#) on the transition.

Last year, SERC reorganized from five to six subregions: SERC PJM; SERC MISO-Central; SERC MISO-South; SERC Central (the Tennessee Valley Authority RC area); SERC South (the Southern Co. RC area); and SERC East (the VACAR South RC area).

SERC has one regional standard, PRC-006-SERC-02, governing automatic underfrequency load shedding requirements. SERC said it agreed with FRCC's recommendation that Florida entities seek a compliance exception from the standard, saying "such action would be the simplest to



SERC subregions | SERC

allow time for the FRCC entity system to be included." ■

Eversource Earnings Rise on Tx, Distribution, Gas

By Michael Kuser

EVERSOURCE

Eversource Energy's *earnings* jumped nearly 15% to \$308.7 million (\$0.97/share) in the first quarter, driven by strong gains in its electric transmission, distribution and natural gas delivery businesses.

"Our Eversource team has gotten off to a tremendous start in 2019," CEO Jim Judge said in a statement.

As New England's largest utility company, Eversource's regulated subsidiaries offer retail electricity, natural gas service and water service to approximately 3.6 million customers in Connecticut, Massachusetts and New Hampshire.

The company said its transmission segment earned \$118.2 million in the quarter, up 10% over last year, while electric distribution took

in \$120.1 million, up 15.2%. The improved results for the electric business were "due primarily to higher distribution revenues, partially offset by the absence of New Hampshire generation earnings in 2019 and higher depreciation expense," Eversource said. The company last year sold off the last of its New Hampshire generating capacity as part of the state's deregulation effort.

The natural gas distribution segment earned \$76.5 million in the first quarter, up 32% from a year ago, mostly because of "the timing of distribution revenues under the recently approved decoupling mechanism for Eversource's Connecticut natural gas business," the company said.

The gas segment additionally benefited from capital tracking mechanisms on higher levels of investment, partially offset by higher operations and maintenance, property tax and depreciation expense, Eversource noted.

The water distribution segment earned \$0.9



| Eversource

million in the quarter, compared with earnings of \$1.5 million a year ago. "The modest decline was due primarily to higher pension costs," the company said.

Judge noted that Eversource is "executing on a nearly \$13 billion, five-year core business capital plan that will greatly help our region address its long-term infrastructure and clean energy needs." The plan projects continued strong spending on electric distribution, solar and natural gas delivery, with steadily declining outlays for transmission heading to 2023. ■

NRG Energy Earnings Drop on ERCOT Hedges

By Michael Kuser



Citing hedging losses in ERCOT, NRG Energy on Thursday *reported* \$94 million in income from continuing operations for the first quarter

(\$1.72/share), down 60% from \$238 million in the same period a year ago.

Adjusted EBITDA for the quarter was \$333 million, a slight decline from 2018.

The drop in income from continuing operations was "driven by retail gains and partially offsetting generation losses on mark-to-market hedge positions in 2018 as a result of ERCOT heat rate expansion and increases in electricity prices," the company said.

"Our integrated platform delivered strong first-quarter results," CEO Mauricio Gutierrez said. "We are preparing for summer operations and executing on our capital allocation priorities, including returning capital to shareholders."

The company highlighted having completed \$500 million of its \$1 billion share buyback program, as well as the planned June 2019 return to service of its 385-MW Gregory combined cycle plant in Corpus Christi.

In an ERCOT market update, the company

said it sees reserve margins continuing to tighten as new builds lag demand growth, and that its retail business is prepared for summer volatility. The company is relying on enhanced demand management programs, hedges on "priced load," expanded maintenance and excess generation to see it through the summer.

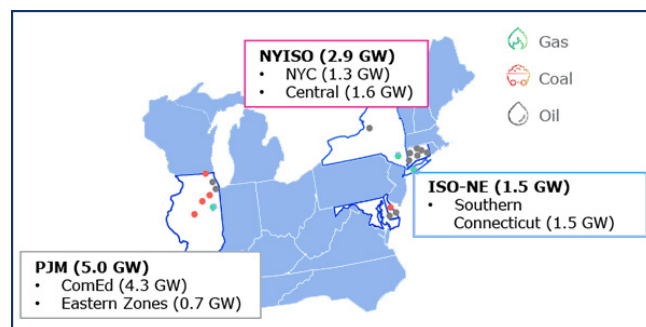
NRG said it also plans to complement its fleet with power purchase agreements.

PJM, ISO-NE

In its Eastern markets, the company highlighted that FERC last month ordered PJM to revise its Tariff to allow fast-start resources to set clearing prices, saying the current rules were not just and reasonable. The commission also ordered NYISO to do the same. (See [FERC Orders Fast-start Rules for PJM, NYISO](#).)

The company said it views current ISO-NE fuel security proposals as insufficient.

The RTO in March filed an interim *proposal* with FERC to address winter energy security for the commitment periods covered by Forward Capacity Auction 14 (2023/24) and FCA 15 (2024/25), a voluntary two-year program to "provide incremental compensation to



NRG east generation fleet | NRG

resources that maintain inventoried energy during cold periods when winter energy security is most stressed." (See [ISO-NE Filing, Whitepaper Address Energy Security](#).)

NRG said it completed the sale of its Renewables Platform and its interests in NRG Yield on Aug. 31, 2018, and the South Central Portfolio on Feb. 4, 2019.

"As a result, 2018 financial information for the South Central Portfolio, NRG Yield, the Renewables Platform and Carlsbad Energy Center was recast to reflect the presentation of these entities as discontinued operations," NRG said. The South Central Portfolio (\$1 billion) and Carlsbad Energy Center — sold to Global Infrastructure Partners on Feb. 27 for \$385 million — were also treated as discontinued operations through their dates of sale this year. ■

Entergy Celebrates Sale of Final EWC Nuke



Entergy said last week the recent sale of its Indian Point nuclear plant completes the final disposition of nuclear assets in its wholesale business, calling it an “important new milestone.”

“We now have definitive agreements to sell all of [Entergy Wholesale Commodities] remaining nuclear assets,” CEO Leo Denault told financial analysts during the company’s May 1 quarterly earnings conference call.

Entergy *announced* in April it had reached an agreement for a post-shutdown sale of Indian Point to Holtec International. The New York plant’s two remaining units, which have a combined capacity of more than 2 GW and date back to the 1970s, will be shut down in 2020 and 2021. The sale is expected to close in 2021.

Denault said Entergy plans to shut down its 688-MW Pilgrim nuclear plant in Massachusetts in May. The New Orleans-based company expects to complete the sale of its 811-MW Palisades plant in Michigan after it is shut down in 2022.

“The sales of these plants are important ... they secure our orderly exit from the merchant business in a way that benefits stakeholders by accelerating the decommissioning timeline,” Denault said.

Entergy *reported* first-quarter earnings of \$255 million (\$1.32/share), compared with \$133 million (\$0.73/share) a year ago. Earnings were \$0.82/share when adjusted for non-recurring items, missing Zacks Investment Research consensus expectation of \$0.94/share.



Indian Point | Entergy

Entergy’s package of earnings materials included its first *analysis on climate change*. In the report, the company said it would reduce its CO2 emissions rate by 50% below 2000 levels by 2030.

“The broad consensus of current scientific data on climate change indicates that as an industry we must do more to reduce our footprint and that of our customers and communities,” Denault said. “Entergy sees this not as a choice, but as a responsibility and an opportunity. “For every unit of electricity we generate in 2030, we will emit half the carbon dioxide we did in 2000.”

Entergy’s share price closed the week at \$96.63, up 18 cents from its May 1 open.

OGE Earnings Down from 2018

OGE Energy on May 2 *announced* first-quarter earnings of \$47.1 million (\$0.24/share), a drop from a year ago when earnings were \$55 million (\$0.28/share).

The Oklahoma City-headquartered company attributed the difference to higher expenses due to the timing of certain projects, additional assets being placed into service, and lower allowances for construction funds as “key environmental assets were placed into service.”

On May 6, Oklahoma regulators will consider an OGE settlement agreement seeking recovery for the addition of scrubbers on its two coal-fired Sooner Power Plant units and converting two coal units at Muskogee Power Plant to gas.

“With our large environmental investments complete, we look forward to continuing to enhance the customer experience through investments in technology and the electric grid,” CEO Sean Trauschke told financial analysts.

OGE’s share price picked up almost a dollar after the earnings release, ending the week at \$41.61. ■

– Tom Kleckner

Plant	Unit	Maximum Dependable Capacity	Ownership	Reactor Type	Reactor	Turbine Generator	Architect/Engineer	Commercial Operation Date	License Expiration Date	Location
Indian Point Energy Center	2	1,028	100% Entergy Nuclear Indian Point 2, LLC	PWR	Westinghouse	Westinghouse	United Engineers & Constructors	1974	2024	Buchanan, N.Y.
	3	1,041	100% Entergy Nuclear Indian Point 3, LLC					1976	2025	
Palisades	1	811	100% Entergy Nuclear Palisades, LLC	PWR	Combustion Engineering	Westinghouse	Combustion Engineering	1971	3/24/2031	Covert Township, Mich.
Pilgrim	1	688	100% Entergy Nuclear Generation Company	BWR	General Electric	General Electric	Bechtel Power	1972	6/8/2032	Plymouth, Mass.

EWC’s nuclear assets (capacity in megawatts) | Entergy

FERC & FEDERAL NEWS

Senate Nuke Development Bill May Hinge on Waste Issue

Continued from page 1

- Submit a 10-year strategic plan to Congress within six months of the bill's enactment detailing how the department would "advance the research and development of domestic advanced, affordable and clean nuclear energy";
- Construct a fast neutron-capable research facility for testing reactor components and fuel;
- Establish a program within a year of enactment to make available high-assay, low-enriched uranium (HALEU) — uranium enriched 5 to 20% — for advanced nuclear reactors; and
- Establish the University Nuclear Leadership Program, which would provide financial assistance for students studying, researching and developing advanced nuclear technologies.

At a Senate Energy and Natural Resources Committee hearing April 30, Chair Murkowski said the bill "is designed to reposition the United States as the undisputed world leader in advanced nuclear technology." She touted it as part of the committee's increasing focus on climate change. "If you're seeking lower emissions, look no further than nuclear energy as part of that energy portfolio mix."

As *USA Today* reported in an article published the same day as the hearing, nuclear power's appeal as an emissions-free source of electricity has begun to win over Democrats, historically opposed to nuclear expansion on environmental grounds.

"It's imperative for the United States to lead the way on tackling the world's climate crisis and that must include the development of clean and innovative technologies like next generation nuclear energy," Booker said when NELA was reintroduced. "This bipartisan bill will spur development of demonstration projects at the Department of Energy, which could become an important source of carbon-free electricity generation."

And as *The New York Times* reported the same day, Republicans are starting to cite climate change as a reason for their policies and priorities.

"Nuclear energy is an essential part of our energy portfolio. It is also critical to reducing carbon dioxide emissions," Sen. John Barrasso



The Senate Energy and Natural Resources Committee meets April 30 to consider the Nuclear Energy Leadership Act.

(R-Wyo.), chair of the Senate Environment and Public Works Committee, said at a hearing the following day. "If we're serious about addressing climate change, we must be serious about preserving and expanding nuclear energy use."

A 36-year Debate

"Has the word 'waste' been mentioned in this conversation? I don't think it has," Sen. Angus King (I-Maine) said when it was his turn to speak at the ENR Committee hearing. "I just met with a group of young people. They're all for carbon-free energy; they're excited. But they're not excited about paying the price of our using electricity and leaving to them what to do with the waste. ..."

"That's my problem with this bill. I'm not opposed to the technology of nuclear power. I'm definitely in favor of carbon-free power; I think it can be an enormous boon to our economy and our climate. But I just don't know how we have this discussion and not talk about this really significant problem that isn't being addressed, and I'm tired of passing burdens on to our children."

King's remarks kicked off a lengthy debate among the committee's members, from which the hearing's five witnesses, including Nuclear Energy Institute CEO Maria Korsnick, were left out. It was a microcosm of a debate the federal government has been having since President Ronald Reagan signed the Nuclear Waste Policy Act in 1983.

The law directed DOE to site and construct a permanent repository for spent nuclear fuel and other radioactive waste. But in 1987, Congress amended the law to designate Yucca Mountain in Nevada as the only site for

storage. The state and the federal government have been battling over the law ever since.

Murkowski and Sen. Lamar Alexander (R-Tenn.), another co-sponsor of NELA, attempted to assuage the concerns of both King and Sen. Catherine Cortez Masto (D-Nev.), saying they, along with Sen. Dianne Feinstein (D-Calif.) were introducing legislation later that day that would solve the problem.

But the bill ([S.1234](#)) appears to be the same Nuclear Waste Administration Act that went nowhere in two previous sessions of Congress. It would create an independent agency to replace DOE as the manager of the nuclear waste program. The new agency would be directed to build a pilot storage facility to hold spent fuel from decommissioned nuclear power plants and emergency shipments from operating plants, and to build consolidated storage facilities for nonpriority spent fuel for utilities or defense-related waste for DOE on a temporary basis.

The agency would also have direct access to the Nuclear Waste Fund — which amassed more than \$40 billion before fee collection was halted by the D.C. Circuit Court of Appeals in 2013 — rather than its use being subject to the always political appropriations process in Congress. The bill is based on recommendations from the Obama administration's Blue Ribbon Commission on America's Nuclear Future in 2012.

Cortez Masto was skeptical of the legislation at the hearing. The bill would not amend the Reagan-era law, which she said left Yucca Mountain as a possible site for the permanent repository.

FERC & FEDERAL NEWS

The next day, at the Senate EPW Committee hearing, Cortez Masto appeared alongside her fellow Democratic senator from Nevada, Jacky Rosen, as witnesses testifying against a separate bill drafted by Barrasso.

The *Nuclear Waste Policy Amendments Act of 2019* is nearly identical to legislation passed by the House of Representatives last year 340-72 (when Republicans held the majority) but never taken up by the Senate. It would allow DOE to contract with private companies for interim storage sites, while Nevada is allowed to present its scientific case against Yucca Mountain in a legal proceeding.

“We can’t walk away from the law of the land,” Barrasso said Wednesday. “We can’t start over and let another 40 years pass to solve this challenge. The discussion draft before us today is a solution.”

But Cortez Masto and Rosen said the choice of Yucca Mountain was arbitrary and not based on science. They pointed to Cortez Masto’s bill, the Nuclear Waste Informed Consent Act (S.649), which would require DOE to obtain permission from a permanent site’s state and local governments before using money from the Nuclear Waste Fund. Besides Rosen, the bill’s co-sponsors are all Democratic presidential candidates: Booker, Kamala Harris (Calif.), Kirsten Gillibrand (N.Y.), Amy Klobuchar (Minn.), Bernie Sanders (I-Vt.) and Elizabeth Warren (Mass.).

Barrasso’s bill also drew sharp rebuke from Nevada Gov. Steve Sisolak.

“I said in my State of the State address in January that not one ounce of nuclear waste will reach Yucca Mountain while I’m governor,” Sisolak wrote to Barrasso several days before the hearing. “I fully intend to keep my promise to the people of Nevada and fight against any attempts to restart the failed Yucca Mountain program.”

Maryland Public Service Commissioner Anthony O’Donnell, chair of the National Association of Regulatory Utility Commissioners’ subcommittee on nuclear waste disposal, appeared before the EPW Committee on Wednesday in support of most provisions in the bill, specifically the changes to the waste fund fee structure. DOE would not be allowed to begin recollecting fees until Yucca Mountain is fully approved and would have to prioritize spending money from the fund toward benefiting communities and education programs in Nevada.

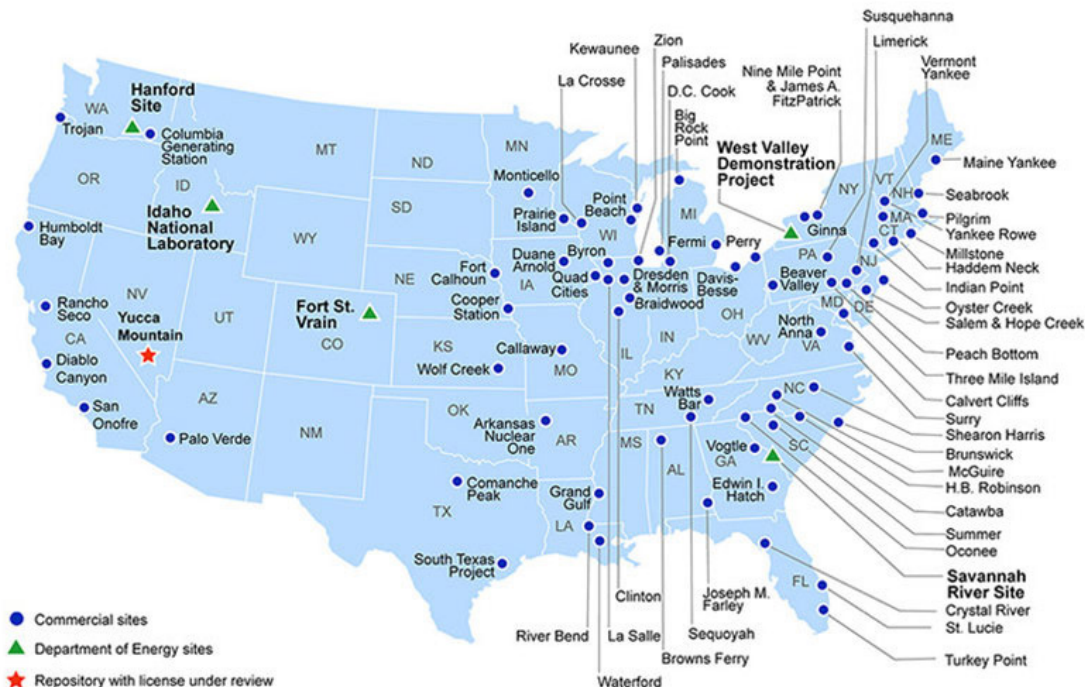
O’Donnell said NARUC did not take a position on creating a new agency to manage the fund, as Murkowski’s bill would do, “but what is crucial is that we act soon so that the federal government does not age out its crucial scientific knowledge in these matters, and that’s what’s happening. I would implore you to do something quickly.”

In an email Friday, NARUC spokeswoman Regina Davis said the organization commends Barrasso and EPW ranking member Tom Carper (D-Del.) “for their leadership in bringing the discussion draft forward and hosting an informative session. We urge them to move to a markup of the discussion draft as soon as possible.”

NARUC continues “to unpack all of the details” of Murkowski’s bill, Davis said, but “from our perspective, it’s important that any legislation include a permanent repository as part of the solution. As the name indicates, ‘interim’ storage solutions ... just ‘kick the can’ down the road for future policymakers to find permanent solutions.”

It also has not taken a position on Cortez Masto’s bill, but that it, “if introduced and passed, should not forestall action on the pending repository license.”

“Electricity ratepayers in at least 39 states have invested literally billions of dollars in characterization of the Yucca Mountain site,” Davis said. “Ratepayers deserve a hearing on their investment. But they are not alone. Those who support the siting of the facility — both in Nevada and around the country — as well as those who believe the site is unsuitable also should have an opportunity to make their case before a neutral and apolitical arbiter.” ■



More than 30 states are home to interim nuclear waste storage sites, most of them being decommissioned power plants. | Department of Energy

CAISO/WECC NEWS



FERC Denies PG&E Rehearing over Contracts Dispute

By Robert Mullin

FERC on Wednesday rejected Pacific Gas and Electric's request to rehear a January ruling in which the commission asserted that it shares authority with a federal bankruptcy judge over any power purchase agreements the utility might seek to modify after filing for Chapter 11 protection.

The commission's [order](#) also consolidated separate petitions by NextEra Energy ([EL19-35](#)) and Exelon ([EL19-36](#)) for declaratory orders preventing PG&E from reneging on high-cost contracts with renewable generators.

As part of its January Chapter 11 filing, PG&E [asked](#) the U.S. Bankruptcy Court in San Francisco to issue an injunction confirming its exclusive jurisdiction over the utility's right to reject PPAs and other FERC-regulated agreements.

At a hearing April 10, PG&E attorney Theodore Tsekerides strenuously argued for Bankruptcy Judge Dennis Montali to impose a permanent injunction preventing FERC from interfering with the bankruptcy case. But Montali declined to make an immediate decision,

instead asking lawyers to reach a compromise. (See [Judge Puts off Decision in PG&E v. FERC.](#))

In arguing against an injunction, FERC's lawyer told Montali that a compromise was possible but would be subject to commission approval. Wednesday's decision suggests the commission is prepared to give little ground over the matter.

In its rehearing request, PG&E contended that FERC's initial order failed to acknowledge Congress' intent in enacting the bankruptcy code, specifically "to permit the successful rehabilitation of debtors" and "prevent a debtor from going into liquidation, with an attendant loss of jobs and possible misuse of economic resources."

The utility further argued that debtor-in-possession status provides the flexibility to assume or reject any contracts until a reorganization plan is established, and that the law does not exempt wholesale power contracts from that process.

PG&E also asserted that the commission's requirement that it approve contract changes could prevent the utility from abrogating contracts despite bankruptcy court approval,

depriving the utility of the flexibility intended by Section 365 of the bankruptcy code.

In rejecting rehearing, FERC insisted that it holds joint authority over the fate of the PPAs.

The commission said the Supreme Court has "long recognized" that the Federal Power Act "is designed to protect consumers" and that the commission protects the public interest in evaluating the rates, terms and conditions of PPAs.

"By contrast, the purpose of the bankruptcy code, as PG&E acknowledges, is to provide a path to rehabilitate bankrupt debtors," the commission wrote. "These are two distinct, yet vitally important, roles, and we conclude that it is necessary to give effect to both."

FERC said wholesale power agreements are not "simple run-of-the-mill" contracts between private parties. Instead, they "implicate the public's interest in the orderly production of plentiful supplies of electricity at just and reasonable rates and, as filed rates, carry the force of law binding sellers and purchasers alike."

"Whether a wholesale rate is just and reasonable — and whether the abrogation or modification of a wholesale power contract is necessary to protect the public interest — is a question that the commission is statutorily obligated — and exclusively authorized — to consider," the commission said.

The commission's "unique role" in making such determinations regarding contracts "neither subsumes nor is subsumed by" bankruptcy law, FERC said. The seeking of bankruptcy protection "does not transform commission-jurisdictional contracts into non-jurisdictional ones ... and it does not divest the commission of its statutory mandate to protect the public interest by examining the ramifications of unilateral changes to wholesale power contracts, a highly technical analysis that the bankruptcy process is not designed to consider."

On Thursday, Justice Department lawyers filed the FERC decision with the bankruptcy court and requested Montali take judicial notice of the decision, establishing it as evidence in the case. It remains unclear when Montali might rule on PG&E's petition for an injunction against FERC. The next hearing in PG&E's bankruptcy is scheduled for May 8 at 9:30 a.m. ■

Hudson Sangree contributed to this report.



The dispute regarding PG&E's PPAs centers on contracts signed when the cost of renewable power was much higher than today. | © RTO Insider

CAISO/WECC NEWS



Cold Forces NW to Dip More Deeply into EIM; Avista Joins

By Robert Mullin

Pacific Northwest members reaped an unusually large chunk of the Western Energy Imbalance Market's \$85.38 million in first-quarter benefits, according to a [report](#) released last week by market operator CAISO.

Necessity was likely the reason. Evidence suggests Northwest utilities were leaning more heavily on the EIM last quarter to keep up with demand.

Among Northwest participants, PacifiCorp secured the largest portion of benefits by far at \$23.76 million, compared with \$10.5 million a year earlier. (See [CAISO, PacifiCorp Gain Most EIM Q1 Benefits](#).) The EIM defines benefits as cost savings and the use of surplus renewable energy.

Portland General Electric took in \$11.74 million (compared with \$3.64 million), while Puget Sound Energy earned \$7.21 million (compared with \$3.01 million).

Idaho Power and Powerex, which did not begin transacting in the market until the second quarter of 2018, brought home \$8.45 million and \$7.23 million in benefits, respectively.

Further south, CAISO realized \$13.08 million in benefits, followed by Arizona Public Service at \$8.20 million and NV Energy at \$5.71 million.

The EIM's total quarterly benefits were the second highest on [record](#), up nearly 103% from a year earlier, in part "driven by increased transfers compounded with higher energy prices" in February and March, CAISO said in its report.

But the report only hints at how steeply prices rose during the quarter — and where those gains were concentrated.

According to a [report](#) released in March by Northwest industry consultant Randy Hardy, a former head of the Bonneville Power Administration, bilateral March 1 day-ahead peak prices at the Mid-Columbia trading hub broke \$900/MWh, driven by natural gas prices of \$160/MMBtu. (By comparison, CAISO day-ahead prices that day ranged from about \$38 to \$82/MWh, holding that high for only a one evening interval.)

"These prices were driven by a number of factors including cold temperatures, a prolonged cold period prior to March 1 resulting in

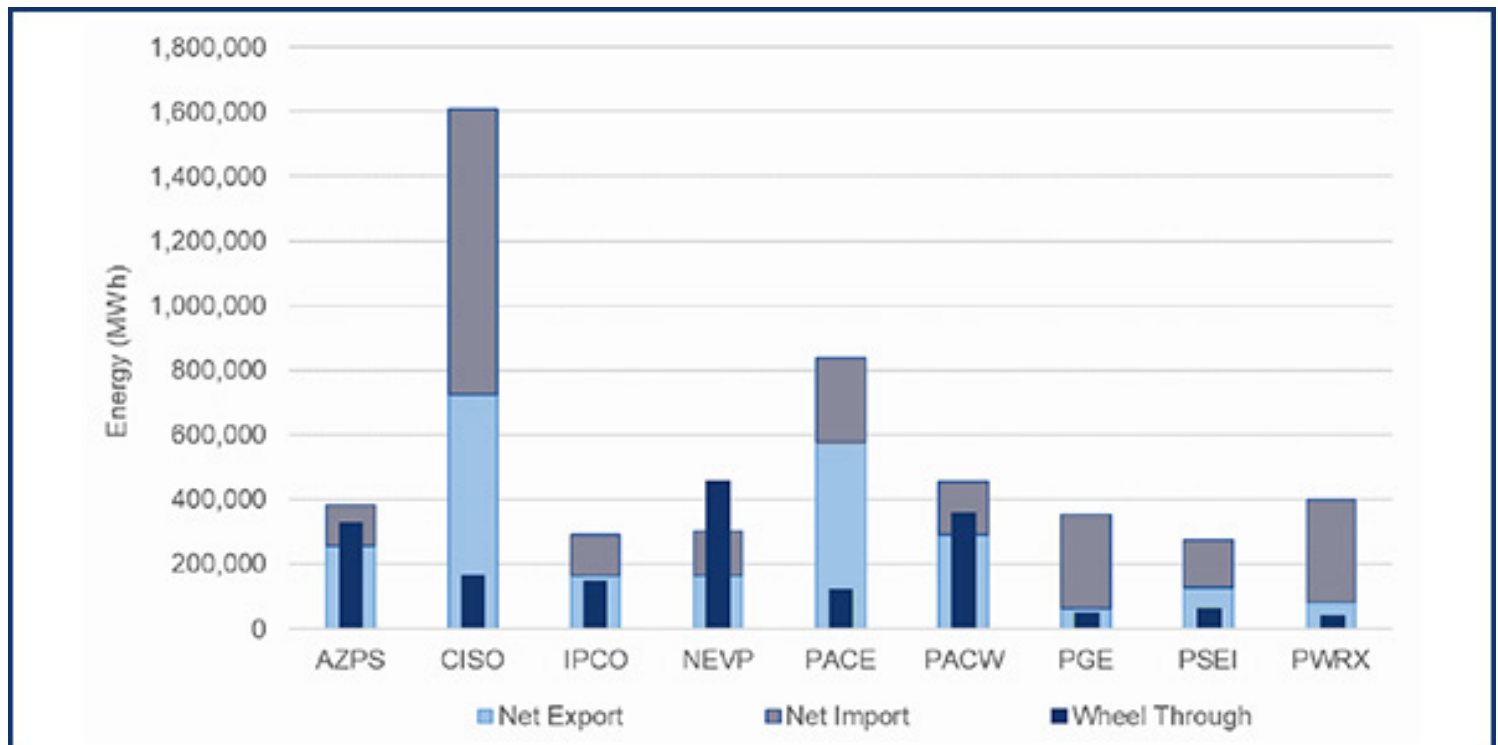
depletion of hydro generation and natural gas in storage, a maintenance outage on the DC intertie [linking the Northwest with Southern California] and limitations in supplies of natural gas impacting the ability of some natural gas generation to operate," Hardy said.

He also noted the high prices occurred despite "all the soon-to-be-retired [Pacific Northwest] coal plants operating at maximum capacity."

Higher prices and tight regional supplies drove Northwest load-serving entities into the short-term market, including the EIM. That development was a boon for power producers in CAISO, which saw net exports surge from 120,364 MWh in January to 449,417 MWh in March — a 38% jump over March 2018. First-quarter exports from CAISO totaled 724,239 MWh, up 19% from the same period a year ago.

The figures also suggest the deepening of a longer-term trend attending the arrival of spring: CAISO becomes a net exporter of energy as increasing solar output coincides with lower electricity demand stemming from mild weather in California.

CAISO said the first-quarter energy transfers



Estimated wheel through transfers in Q1 2019 | CAISO

CAISO/WECC NEWS



allowed it to avoid the curtailment of 52,254 MWh of renewable energy, down more than 20% from last year but in line with the first-quarter 2017 figure. The avoided renewable curtailments translated into the displacement of 22,365 metric tons of carbon dioxide, based on an assumed default emissions rate of 0.428 metric tons CO₂/MWh from other sources of generation. The ISO estimates that, by avoiding curtailments, the EIM has helped displace 346,649 tons of CO₂ since 2015.

The EIM has yielded \$650.26 million in benefits for its members since being launched with PacifiCorp as its first member in November 2014, CAISO estimates.

EIM Wins New Member in Avista

The EIM is poised to spread into yet another corner of the Northwest, with the announcement April 25 that Spokane, Wash.-based Avista has signed up to join the market beginning in April 2022. The utility serves about 340,000 electric customers in western Washington and northern Idaho and operates about 2,750 miles of transmission.

Avista also owns 1,042 MW of hydroelectric generation and 1,875 MW of thermal capacity, 222 MW of which is generated

by units of the coal-fired Colstrip plant in Montana, which could close as early as 2025 under pressure from Washington legislators.

“Joining the EIM is another milestone in our effort to efficiently use carbon-free renewable resources throughout the region while helping maintain reliability and keeping power affordable for our customers,” Jason Thackston, Avista senior vice president for energy resources, said in a statement.

The Sacramento Municipal Utility District

began participating in the EIM in April, while the Los Angeles Department of Water and Power, Arizona’s Salt River Project and Seattle City Light are scheduled to begin participating in April 2020.

Public Service Company of New Mexico had anticipated joining in 2021 but may face a delayed entry as it works with state regulators to settle issues around recovering costs related to participation. (See [PNM Bid to Join Western EIM Gets Approved in Part.](#)) ■

Region	January	February	March	Total
APS	\$1.10	\$4.76	\$2.34	\$8.20
ISO	\$1.25	\$5.63	\$6.20	\$13.08
IPCO	\$1.64	\$4.21	\$2.60	\$8.45
NVE	\$1.09	\$2.20	\$2.42	\$5.71
PAC	\$5.56	\$11.01	\$7.19	\$23.76
PGE	\$1.36	\$5.36	\$5.02	\$11.74
PWRX	\$1.23	\$2.91	\$3.09	\$7.23
PSE	\$0.85	\$4.18	\$2.18	\$7.21
Total	\$14.08	\$40.26	\$31.04	\$85.38

First quarter 2019 benefits in millions USD by month | CAISO

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CAISO/WECC NEWS



FERC Rejects Oakland Appeal v. PG&E

By Hudson Sangree

FERC last week denied a request for rehearing by the city of Oakland against Pacific Gas and Electric for charging retail instead of wholesale power and transmission rates at the Port of Oakland, which maintains an extensive distribution network ([EL18-197](#)).

The city, acting through the port, had claimed PG&E violated the Federal Power Act by charging the higher rates and failing to file a wholesale service agreement with FERC. It said that since 1997 it had resold virtually all the electricity it received from PG&E to metered electricity end-use customers and that PG&E should have been aware of the situation and charged wholesale rates. (See [FERC Denies Oakland Complaint](#).)

The city asked for a refund of the difference between the retail rates PG&E charged and the wholesale rates the city argued it should have paid for electricity it received between 1997 and 2017, when it signed a wholesale

agreement with the utility.

In its Dec. 20, 2018 order, FERC denied the complaint, finding that the port's claims lacked legal and factual support and that its request for a declaratory order was unwarranted. In particular, FERC said Oakland had failed to provide evidence, such as invoices, of its resale of electricity to end users. Moreover, the city never specifically asked PG&E to change its rates from retail to wholesale, and the utility did not have an obligation to do so on its own, the commission said.

"We do not believe that Port has substantiated its general claim that PG&E violated Section 205c of the FPA by failing to file a wholesale transmission and power sale agreement ..." the commission said. "Port's statements to the contrary are speculative, not supported by the record evidence, and insufficient to meet its FPA Sections 206 and 306 burdens."

"[E]ven if we were to find that PG&E violated FPA Section 205c as alleged by Port, we would

not direct refunds here," FERC said. "As noted above, Port had ample opportunity over roughly two decades to clarify the nature of the service it took from PG&E and failed to do so. We therefore do not think requiring refunds from PG&E would be appropriate."

In seeking a rehearing, the city argued FERC should have either issued a declaratory order or scheduled a hearing because the city had established a prima-facie case under commission regulations. The city contended FERC had failed to engage in reasoned decision-making and disregarded evidence.

FERC disagreed, saying the city had offered only a single photo of unmarked meters to show it was making wholesale sales and had failed to establish a prima-facie case.

"PG&E thus was not required to rebut Port's purported evidence — i.e., the photograph showing its meters — on this point, and the commission was not obligated to set the issue for hearing," FERC wrote. ■



FERC rejected an appeal by the city of Oakland regarding rates PG&E charged the city's port.



Texas ROFR Legislation Pits Incumbents, Transcos

Continued from page 1

being the world's best competitive market. It's also the same state, opponents of the legislation note, where the \$6.8 billion Competitive Renewable Energy Zone project resulted in 3,600 miles of high-voltage transmission lines being built in just five years.

"An ironic twist," said Vera Carley, a spokesperson for **GridLiance**, a competitive transmission company that caters to public power agencies.

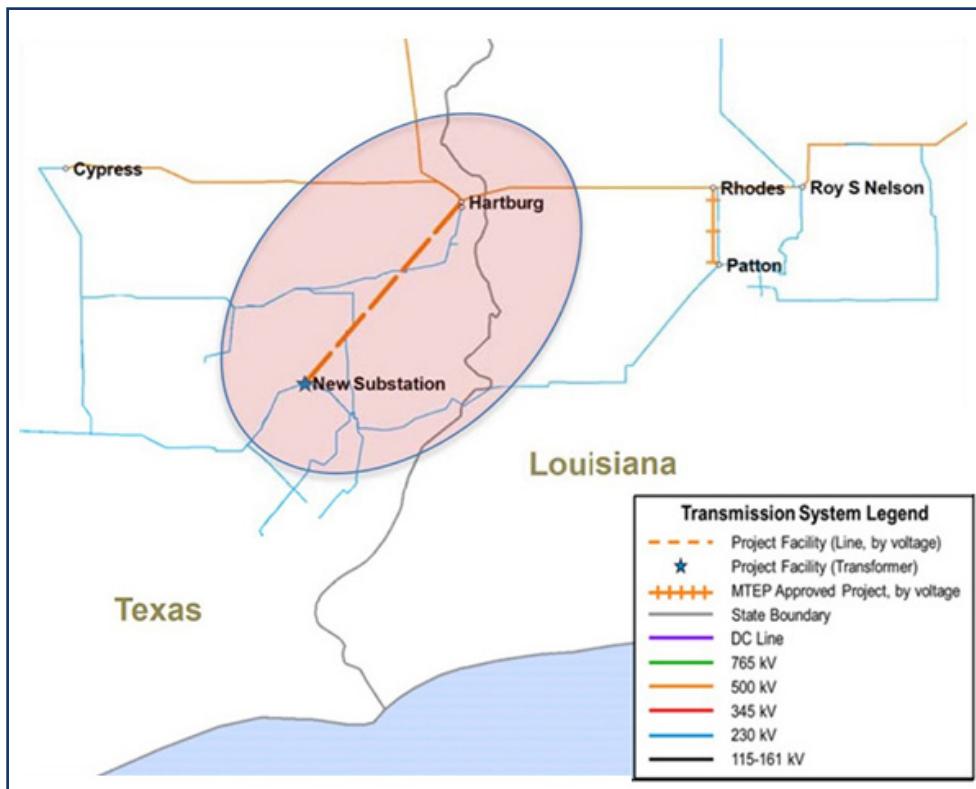
The bills would grant certificates of convenience and necessity (CCNs) to build, own or operate new transmission facilities that interconnect with existing facilities "only to the owner of that existing facility."

GridLiance and other opponents of the legislation argue it would:

- Make it illegal for anyone other than incumbent utilities to build new transmission in Texas.
- Eliminate the Texas Public Utility Commission's authority to license new entrants to build transmission assets and provide transmission services.
- Prevent public power utilities and cooperatives from choosing with whom they want to partner by limiting their choice to the local incumbent utilities.
- Overturn the Hartburg-Sabine Junction 500-kV project, which MISO last year awarded to NextEra Energy Transmission (NEET). The PUC has yet to grant a CCN for the project, though FERC in March authorized NEET to recover all "prudently incurred" costs related to its investment in the project. (See [NextEra Gains Incentive for Hartburg-Sabine Project](#).)

The bill's opponents include the U.S. Department of Justice, which **responded** to an inquiry by Texas Rep. Travis Clardy by expressing concerns that the bills would "limit competition, thereby potentially raising prices and lowering the quality of service for electricity consumers."

"By restricting the development of transmission facilities to local incumbents, H.B. 3995 can harm consumers by reducing or eliminating competition," wrote Daniel Haar, acting chief of competition policy and advocacy in DOJ's Antitrust Division. "Even if an incumbent is best-situated to develop a particular project, H.B. 3995 would likely reduce the



Hartburg-Sabine Project | MISO

competitive pressure on such incumbents to develop higher-quality, lower-cost transmission facilities.

"Furthermore, consumers may face higher electricity rates and less reliable service, as H.B. 3995 may limit construction of transmission that would increase the supply of generation available to serve a local territory or area," he said.

'Multitude of Benefits'

GridLiance is among those leading the charge against the legislation. In written comments filed with the State Affairs Committee, CEO Calvin Crowder said the bill would "deprive Texans ... of the benefits of planned competitive transmission processes and would protect incumbent investor-owned utilities from competitive forces that drive project costs down."

Crowder backed up his argument by pointing to a [Brattle Group study](#) of U.S. projects that found noncompetitive projects average 34% above initial estimates, while winning bids in competitive projects average 40% below estimates.

NEET Southwest won the Hartburg-Sabine bid with a \$115 million bid, below MISO's \$122.4 million project estimate.

Aundrea Williams, president of NextEra affiliates NEET Southwest and Lone Star Transmission, said in testimony before the State Affairs Committee that the Florida-based company "supports preserving the PUC's jurisdiction over [in-state] transmission projects."



NextEra's Aundrea Williams | © RTO Insider

"The PUC ... should not be forced to pick from an unnecessarily limited set of qualified transmission providers," she said. "Options would be taken away from the PUC, and thus Texans would be robbed of the multitude of benefits that transmission-only utilities provide."

Commission spokesman Andrew Barlow said simply, "The PUC will implement whatever legislation becomes law."

Xcel Energy subsidiary Southwestern Public

ERCOT NEWS



Service supports the legislation “because our ability to build and own transmission lines that connect to our regional system protects our customers’ best interests,” spokesman Wes Reeves said.

“We have a long history of building transmission lines at a lower cost to our customers, and we have the resources available to repair them quickly to ensure the reliability of the system,” Reeves told *RTO Insider*.

Xcel and SPS have an appeal pending before the Texas 3rd Court of Appeals that protests a prior PUC declaratory order saying there is not a ROFR in the SPS service area. (See [Texas Commission Rejects SPS ROFR Request](#).)

Williams said utilities supporting the legislation have lost their arguments on competitive transmission awards wherever they have made them.

“They took a swing and lost at the PUC; they took a swing and lost in the courts; and they took a swing and lost in the markets,” she said. “Now, as a last resort, they are changing the rules of the game. They’ve already had their three strikes and are out. Their market design is not what is best for Texas.”

Point, Counterpoint

The legislation has resulted in a flurry of competing op-eds in Texas newspapers.

Former FERC commissioner Tony Clark weighed in on the debate with an [op-ed](#) in the *Houston Chronicle* calling for the bill’s passage, writing that there’s “scant proof” that FERC Order 1000’s competitive process would “benefit Texas consumers, employers or industry.”

“At worst, [Order 1000] does more harm than good, delaying investment in needed transmission projects,” Clark said. “The only verifiable results of the federal process? Bureaucracy, litigation and delay. It is a rule with high compliance costs, but few tangible results to date. That’s not competition; it’s just a regulation that does not work.”

Clark’s op-ed was rebutted by Allen Johnson, director of government affairs for Citizens Against Government Waste in D.C. Johnson’s [counterpoint](#) said the legislation is “clearly designed” to protect the incumbents at the expense of customers.

The legislation “would not only apply to any future transmission projects, it would overturn a competitively awarded transmission project,” he said. “Rather than receiving the lower prices that would be provided by the winning bidder, consumers would be stuck with the current transmission company. ... This is plain and obvious corporate welfare.”

Bernard Weinstein, associate director of Southern Methodist University’s Maguire

Energy Institute, took Clark’s argument a step further in the *Dallas Morning News* by [saying](#) the legislation is necessary because “a few companies and hedge funds are attempting to upend the system” by imposing Order 1000 on Texas.

That would open the state to federal regulation, Weinstein warned, overlooking the fact SPP and MISO already have footprints in Texas. The PUC and ERCOT, which would be responsible for implementing the bills, are not FERC-jurisdictional.

“Let’s not be seduced by the claim that so-called competition in transmission line development will mean a better deal for households and businesses. It won’t,” Weinstein said.

Williams responded with a [letter](#) to the *Morning News*. Identified only as “Aundrea Williams, Austin,” she charged that the legislation was prompted when NextEra “beat out the incumbent by tens of millions of dollars.”

“Supporters of the bill refuse to address the savings to Texans,” Williams wrote. “Make no mistake: Texans will have safe power either way, but their way costs a whole lot more. Texans deserve the best, and taking time to study the issue lets our representatives do that. Don’t let sore losers become winners — force them to do better.” ■

NRG to Bring Back Texas Gas Plant for Summer

NRG Energy said last week it expects to return to service an inactive Texas gas plant in time for summer, giving ERCOT additional capacity.

ERCOT enters summer with a historically low reserve margin of 7.4%. The 385-MW Gregory plant will give the grid operator much needed extra capacity.

Gregory, located just outside Corpus Christi, was shut down in late 2016 when its cogeneration partner, Sherwin Alumina, filed for bankruptcy and ceased operations. It is expected to return to service as a combined cycle facility in early June.

In a [statement](#) released after NRG’s first-quarter earnings call Thursday, CEO Mauricio Gutierrez said the Texas Public Utility Commission’s recent actions to strengthen the ERCOT market “reinforced our decision to return Gregory to service ahead of summer.” (See related story, [NRG Energy Earnings Drop on ERCOT Hedges](#).)



NRG CEO Mauricio Gutierrez | © *RTO Insider*

The PUC in recent months has worked to improve coordination between electric utilities and pipeline companies and ordered tweaks to ERCOT’s operating reserve demand curve price adder.

ERCOT will release its final resource adequacy assessment for the summer on Wednesday. ■

— Tom Kleckner

ISO-NE NEWS



Editor's Note: We're in the Room in NEPOOL!

It's been a little more than six years since *RTO Insider* began covering PJM stakeholder meetings. We expanded to MISO and NYISO in late 2014, SPP in early 2015 and ERCOT and CAISO in 2016, growing our readership along the way. But there was one region that resisted our charms: the New England Power Pool (NEPOOL).

As has been well documented in these pages, we prompted a showdown over that policy last year by having reporter Michael Kuser, a Vermont resident, apply for membership in NEPOOL as an End User member. FERC issued a split decision on our challenge, ruling NEPOOL could not bar Michael from membership based on his occupation but also leaving standing NEPOOL's ban on public attendance and its bylaws barring members "from reporting on deliberations or attributing statements to other NEPOOL members."

It wasn't the resolution that we – or we suspect, many NEPOOL members – wanted, but it's the resolution we got. And so last Friday, Michael – joined by me, as his alternate – attended our first NEPOOL Participants Committee meeting in Boston. (See our coverage on [pages 21-23](#).)

As we told people we met Friday, our application was intended to provide a means to observe stakeholder meetings, and we would not be speaking or voting except on the issue of transparency. (We have subscribers from all stakeholder sectors, and it is not our role to take positions on market policies or operational matters.)

We still think NEPOOL's role in shaping market



RTO Insider's Michael Kuser before attending his first NEPOOL meeting | © RTO Insider

rules and other policies in ISO-NE is a public function and its meetings should be open to all. But since FERC seems to want us to work this out ourselves, we at *RTO Insider* are committed to doing all we can to accomplish that. We were humbled by the gracious reception we received in Boston Friday – both from those who supported us and those who opposed us. Thank you for that.

A special thanks to attorney Steve Huntoon for representing us so ably before FERC and Day Pitney's attorneys David Doot and Pat Gerity and End Users Chair Liz Delaney for easing our entry.

I'm thrilled we will now be able to cover NEPOOL's stakeholder meetings in real-time

– even if under NEPOOL's restrictions. It will improve our reporting, and, over time, I hope it will allay any fears NEPOOL members have about having press in the room.

We are committed to covering all sides fairly and accurately in NEPOOL just as we have worked hard to do in the other six RTOs/ISOs. We're not perfect in seeking this balance. We will make honest mistakes, as we note in corrections from time to time.

If you ever feel we've fallen short of our promise, please don't hesitate to contact me.. ■

– *Rich Heidorn Jr.*
 Editor & Co-Publisher
rich.heidorn@rtoinsider.com

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NEPOOL Participants Committee Briefs

Members OK Order 841 Compliance Revisions

BOSTON — The NEPOOL Participants Committee on Friday retroactively approved Tariff revisions filed by ISO-NE on May 1 to address FERC's concerns over the RTO's initial compliance filing in response to the commission's Order 841 rulemaking on energy storage.

ISO-NE's initial Dec. 3 compliance filing proposed two types of energy storage: continuous storage (batteries and other resources that can transition nearly instantaneously between charging and discharging at any MW level within their range) and binary storage (facilities such as pumped storage whose physical constraints prevent them from quickly changing from charging to discharging) ([ER19-470](#)).

The commission issued a deficiency letter on April 1 asking the RTO to explain whether a continuous storage facility would be compensated for lost opportunity costs if it were dispatched for reserves rather than energy. (See "Questions to ISO-NE Touch on Reserves" in [FERC Asks RTOs for more Details on Storage Rules](#).)

The RTO's May 1 [response](#) said "any resource, including a continuous storage facility, dispatched for reserves rather than energy is compensated for lost opportunity costs (which would result from foregone energy sales) via the real-time reserve clearing price, not [net commitment period compensation]."

Facilities that have insufficient available energy to run at their full capacity for a full hour should not receive an opportunity cost payment because their own physical limitation creates the suboptimal dispatch, the filing said.

ISO-NE said it "is very concerned" that paying an opportunity cost payment would likely entail complicated settlement calculations and could create perverse incentive for continuous storage facilities "to maintain relatively small amounts of stored energy in order to be paid this opportunity cost frequently."

The commission also had asked whether some continuous storage facilities may have start-up or no-load costs, such as costs for cooling a storage facility that is online but not dispatched.

The RTO said such a case was more likely to be an example of a fixed cost, incurred independent of its commitment and dispatch instructions, rather than a no-load cost.



NEPOOL's Participants Committee met May 3 in the International Ballroom at the Hilton Boston Logan Airport. | © RTO Insider

"In a hypothetical universe in which batteries were committed and decommitted by ISO-NE, it seems likely a battery would incur the same cooling costs when it was offline awaiting a start-up instruction as it would incur once it was online at zero megawatts. If this is the case, these costs would be fixed costs," it said.

Alternatively, it said, if a portion of cooling costs varies with output, that portion would be considered a variable cost. Cooling costs would be characterized as a no-load cost only if, when ISO-NE issues a shut-down instruction to an online resource dispatched to zero megawatts, the resource's costs decrease by a discrete amount.

ISO-NE said it does not believe this to be the case for any costs likely to be incurred by continuous storage facilities.

Fuel Security Reliability Reviews

The committee approved revisions to Planning Procedure (PP) 10, Appendix I regarding fuel security reliability reviews for Forward Capacity Auction 14 (delivery year 2023/24) with 69.5% support.

The RTO conducts the review on resources that submit retirement de-list bids to determine whether they are needed for reliability.

The changes were approved after NEPOOL attorneys added language to the motion to clarify that supporting the changes to the PP "shall not be construed as support for the ISO's broader planning for fuel security and resource retention."

But that wasn't sufficient to win the votes of the End Users sector, which was unanimous in

opposition. End Users Chair Liz Delaney said many in her sector believe ISO-NE's fuel security model is overly conservative and could lead to expensive contracts to retain unnecessary generators. "It's hard to separate the assumptions from the operation of the model," she said in an interview.

The Generators, Transmission and Publicly Owned Entity sectors were unanimous in support. Suppliers were mostly in support (13.43%, out of a possible 16.79%, in favor) and Alternative Resources mostly opposed (5.66% in favor).

The proposal had fallen just short of the required two-thirds vote at the Reliability Committee April 24.

ISO-NE asked for the changes, saying they would:

- Improve modeling of injections from local gas distribution company satellite LNG storage facilities;
- Maintain the oil inventory levels from the 2017/2018 winter;
- Shape the conventional hydroelectric generation output;
- Provide additional time for offshore wind resources to demonstrate their contractual commitments; and
- Expand the kinds of entities that can provide evidence of contractual commitments under state procurements to include transmission companies, distribution companies and the New England States Committee on Electricity (NESCOE).

ISO-NE NEWS



The RTO's Norman Sproehle **told** the Reliability Committee in April the changes "cover a variety of optimistic scenarios which minimize the potential for retaining resources unnecessarily."

Among other things, the changes replaced the assumed replenishment for oil-fired generation from "one proxy tanker truck per hour" to 202 barrels per hour when reorder levels are reached. The RTO clarified oil inventory levels apply to oil-only resources and dual-fuel resources that operate primarily on oil during the winter; it said dual-fuel resource tank inventory levels apply to dual-fuel resources that operate primarily on natural gas during the winter.

It also promised to perform an "informational analysis" for an additional 500 MW of offshore wind being developed under a state procurement with an in-service date for winter 2023/24, which is not included in the base model.

Resources participating in Forward Capacity Auction 14 will be modeled in the study with an in-service date of Jan. 1, 2024, one month later than the original Dec. 1, 2023, deadline.

Consent Agenda

The PC approved four rule changes on the consent agenda, following unanimous approv-

als at lower committees:

- Operating Procedure (OP) 17 (Load Power Factor Correction): Revisions to Appendix C to update company names, and additional, minor grammatical revisions. Approved by the Reliability Committee March 20.
- Market Rule Section III.1.9.1.2(a) (Offer and Bid Caps): Revisions to simplify implementation of the day-ahead market (DAM) offer capping approach under Order 831. Recommended by Markets Committee at its April 9-10 meeting.
- GIS Operating Rules: Revisions to the NEPOOL generation information system (GIS) operating rules to enhance searching and sorting capabilities of public reports and importation of requested billing adjustment (RBA) data into the GIS. Recommended by the Markets Committee at its April 9-10 meeting.
- Reasonable Effort Timelines for Interconnection Studies: Tariff revisions increase from 45 to 90 days the "reasonable efforts" deadline for ISO-NE and transmission owners to complete interconnection feasibility studies after receipt of an executed study agreement. Increases the deadline for completing system impact studies from 90 to 270 days after the receipt of the study agreement, deposit, technical data and

demonstration of site control, if required. ISO-NE requested the change to "better align with the expected duration of the study efforts given the scopes of work involved" in the studies. Recommended by the Transmission Committee April 17.

Load Relief, GMD

The committee approved on a single vote changes to OP-2, -4, -4A and PP-11, which were recommended by the Reliability Committee in separate votes on April 24.

Revisions to OP-4 and OP-4A adjust the estimates of load relief from OP-4 actions to be based on a generic 25,000-MW load amount rather than the 50/50 load forecast in the capacity, energy, loads and transmission (CELT) report. Revisions to PP-11 implement requirements under NERC reliability standard **TPL-007-3** (Transmission System Planned Performance for Geomagnetic Disturbance (GMD) Events). The NERC standard includes requirements for performing a GMD vulnerability assessment; providing geomagnetically induced current (GIC) flow information; performing transformer thermal impact assessments for a GMD event; and gathering GIC monitor and geomagnetic field data. ■

— Michael Kuser and Rich Heidorn Jr.

If You're not at the Table, You May be on the Menu

RTO Insider is the only media "inside the room" at RTO/ISO stakeholder meetings. We alert you to rule changes that could affect your business — months before they're filed at FERC. Plus we monitor the news at FERC, EPA, CFTC, Congress, federal and state courts, and state legislatures and regulatory commissions.

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For more information contact Marge Gold: marge.gold@rtoinsider.com / 240-750-9423



NEPOOL Rebuffs ISO-NE on 'Surplus' Interconnection Service

By Michael Kuser and Rich Heidorn Jr.

BOSTON — Rejecting ISO-NE's concerns over "disrupting" the interconnection queue, the NEPOOL Participants Committee *voted* Friday to broaden the RTO's proposed rules for obtaining surplus interconnection service (SIS) under FERC Order 845.

Order 845, approved in April 2018, set *pro forma* minimum standards for large generator interconnection procedures and agreements. FERC said SIS, which would allow a customer's affiliate or a third party to obtain unused interconnection service and would encourage more efficient use of existing infrastructure (RM17-8). (See *FERC Order Seeks to Reduce Time, Uncertainty on Interconnections*.)

The PC voted 67.58% in favor of an *amendment* by RENEW Northeast, an association of renewable energy providers and advocates, which said the RTO's proposal did not comply with Order 845 because it would restrict SIS to a continuously available megawatt quantity and not allow periodically available service. Order 845 said the service could be used at interconnections for generating units that operate infrequently, such as peakers, or that often operate below capacity, such as renewable generators. The amendment was introduced at the Transmission Committee by the Union of Concerned Scientists, a RENEW member.

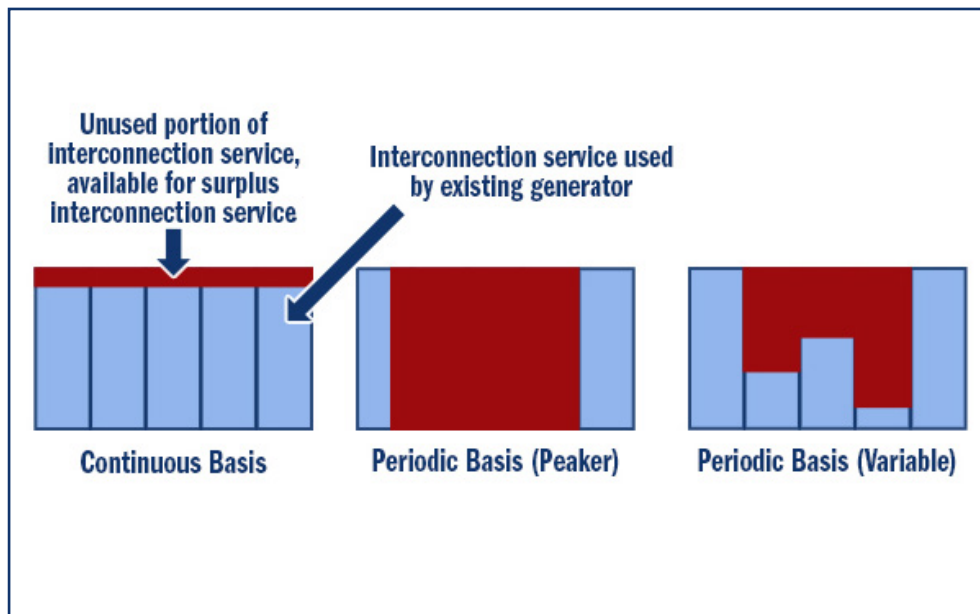
RENEW also said the RTO's proposal would restrict surplus interconnections to "non-material modifications to existing generators," a more restrictive standard than FERC called for in its February order on rehearing (RM17-8-001; Order *No. 845-A*). (See *'Boring Good' Rulemaking Seeks to Clean up Order 845*.)

In addition to allowing periodically available service, the amendment eliminates the RTO's "non-material" restriction.

After approving the RENEW amendment, which NEPOOL will file with FERC, the members rejected ISO-NE's original proposal, with only 54.2% of votes in favor.

Transmission Owners' Amendments

In addition to its provisions on SIS, ISO-NE's proposed compliance filing deviated from FERC's *pro forma* generator interconnection agreement (GIA) regarding customers' option to build, prohibiting it in cases that would require the moving or outage of existing transmission equipment, NEPOOL counsel Eric



NEPOOL members agreed to allow surplus interconnection service when capacity is available on a periodic basis, such as for customers with peakers or intermittent generation. ISO-NE would have limited it to capacity available on a continuous basis. | *RENEW Northeast*

Runge said in a memo to members.

Although the ISO-NE motion failed, the RTO is expected to file it with FERC, nonetheless. It includes *provisions* by transmission owners Eversource, National Grid and Avangrid, as represented by the Participating Transmission Owners Administrative Committee, that would allow them to collect "actual costs," rather than "agreed upon" costs as in the *pro forma*, for overseeing customers who choose to build interconnection facilities.

ISO-NE Fears 'Disruption'

ISO-NE had contended the RENEW amendment "conflates" SIS with a different provision in Order 845 that allows for co-location of more megawatts behind a point of interconnection but requires control technology to limit the output to the requested interconnection service levels and requires the filing of a new interconnection request.

In a *memo* circulated to NEPOOL members hours before the meeting, the RTO said its proposal "fully complies with Order No. 845 while not disrupting the existing interconnection framework used in conjunction with the markets."

The memo said New England's capacity network resource interconnection service (CNRIS) and network resource interconnec-

tion service (NRIS) "directly correlate to an interconnection customer's desired level of participation in the New England markets, which do not utilize a system of physical rights like the *pro forma* services."

CNRIS and NRIS are only available on a continuous basis.

"The RENEW approach proposes to ignore the unchanged requirement that a material modification requires a new interconnection request [and] calls for significant interconnection studies to be performed outside of the orderly queue process without addressing how those studies would be prioritized and coordinated with the evolving system changes that are articulated by the interconnection queue and other planning processes."

RENEW disagreed, saying Order 845 requires the RTO to utilize an expedited study process outside of the queue to process SIS requests.

"We recognize 'outside of the queue' requests are disruptive, but that's what the commission's order said," Susan Muller, of Boreas Renewables, who presented the RENEW amendment, told *RTO Insider*. "We're not suggesting new applications behind the point of interconnection be approved if it causes any reliability problems."

The RTO's compliance filing is due May 22. ■

ISO-NE NEWS



FERC Orders Settlement on Emera Maine Tx Rate Dispute

FERC last week ordered settlement judge procedures for four challenges regarding Emera Maine's proposed transmission rate, summarily deciding on four other challenges and ordering the utility to make a compliance filing within 30 days (ER15-1429).

The commission's April 30 order accepted in part the challenges to Emera Maine's annual update filed in May 2018 by the Maine Public Utilities Commission and a customer group. The update proposed transmission service

charges to take effect June 1, 2018, under the company's Open Access Transmission Tariff (OATT) for the Maine Public District, which includes Aroostook County and a small piece of Penobscot County. (Emera Maine provides service under a separate OATT to the Bangor Hydro District: Hancock, Piscataquis and Washington counties and most of Penobscot County.)

The customer group included Eastern Maine Electric Cooperative, Houlton Water Co., the

Office of Maine Public Advocate, and Van Buren Light and Power District.

The order summarily decided on the correction of certain acknowledged errors in the 2018 annual update, the exclusion of certain costs for land associated with a project not in service, the exclusion of some distribution costs equipment from transmission rates, and the flowback of excess accumulated deferred income taxes (ADIT).

Settlement Issues

The commission said the remaining issues raise questions of material fact that it could not resolve based on the record before it and should be decided at a hearing if not resolved through settlement. The commission directed the chief administrative law judge to appoint a settlement judge within 15 days of the order.

Among those issues are excluding certain regulatory expenses that the complainants say were improperly allocated or directly assigned to Maine Public District transmission customers and excluding costs that may constitute a double-recovery for amortization of merger-related losses.

Two remaining issues are whether to exclude costs attributed to a rebuild of Line 6901 (which opponents say were incurred prior to MPUC authorization and should be considered as a canceled project) and whether some costs attributed to the rebuild should be attributed to other projects.

New Owner

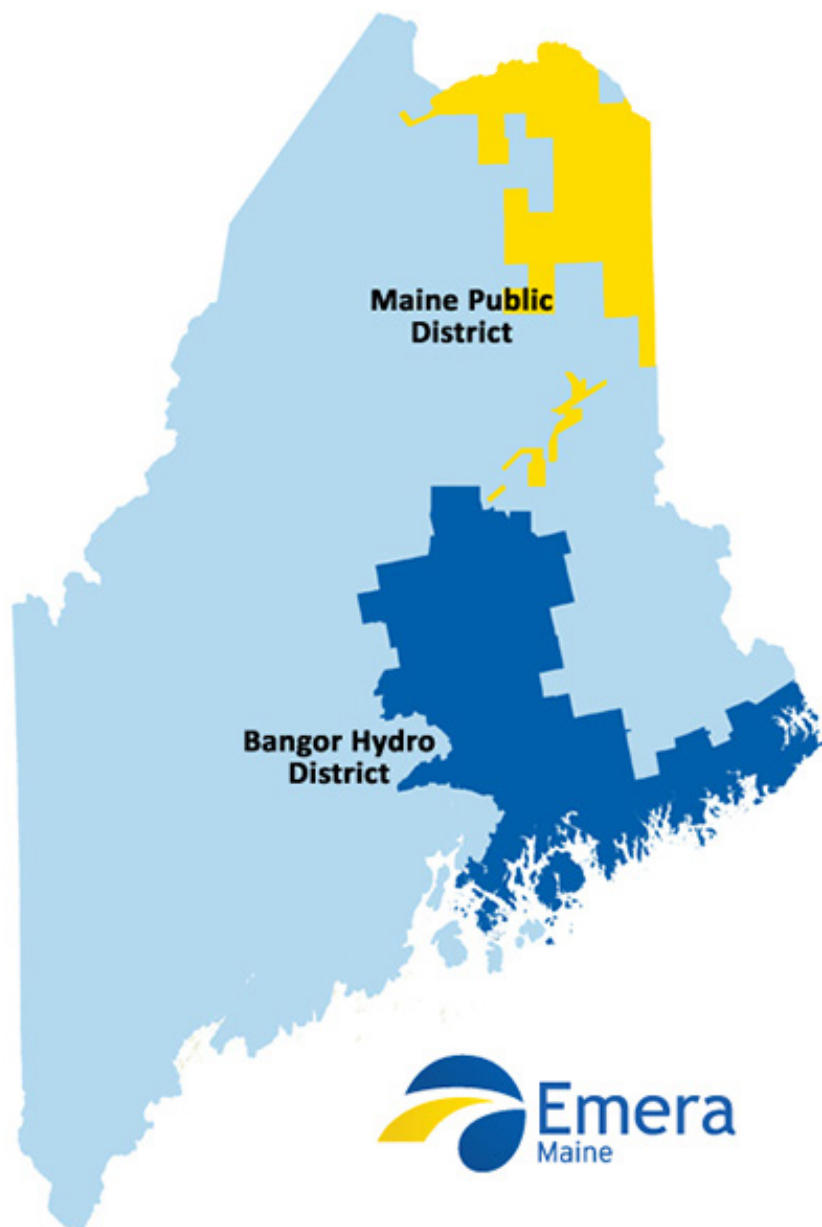
On March 25, ENMAX Corp. *announced* it had reached an agreement to purchase Emera Maine for \$959 million (\$1.286 billion CAD) from parent Emera Inc.

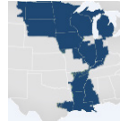
The sale is part of Emera's plan to reduce corporate debt and fund its three-year capital investment plan. Emera said the deal, and the previously announced sale of its New England gas generation portfolio will raise about \$2.1 billion CAD.

ENMAX, based in Calgary, Alberta, owns and operates transmission, distribution and generation facilities throughout the province, with 669,000 electricity, natural gas and renewable energy customers.

The deal is expected to close late this year. ■

— Michael Kuser





Environmental Groups Divided on Cardinal-Hickory Creek Line

By Amanda Durish Cook

If politics makes strange bedfellows, then transmission policy can create equally unlikely adversaries when it cuts across the competing interests of different environmental groups inclined to agree on most issues.

An example is currently playing out in Wisconsin, where environmentalists, preservationists and renewable energy advocates are at odds with each other over the pending approval of a major MISO transmission line designed to carry wind energy to population centers. Some are seeking to advance the project as proposed, while others support substitute plans that include adoption of local renewable resources.

The \$500 million, 345-kV Cardinal-Hickory Creek project would span about 120 miles from Dubuque County, Iowa, to Dane County, Wisc. Costs for the joint project involving American Transmission Co., ITC Midwest and Dairyland Power Cooperative would be shared on a load-ratio basis across ratepayers in MISO.

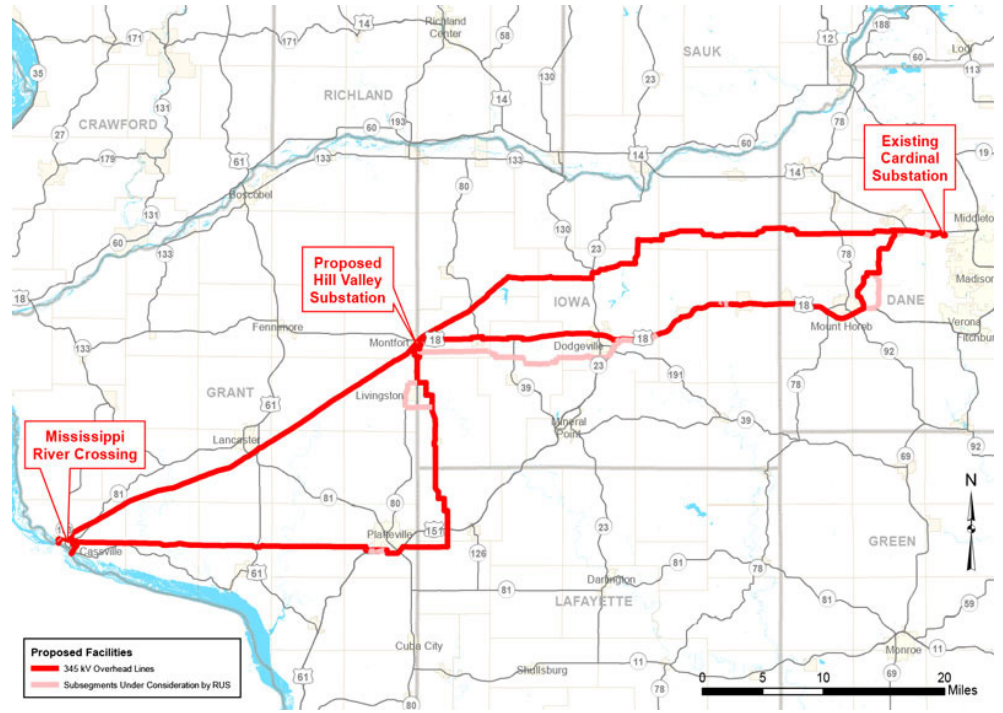
The Wisconsin Public Service Commission will hold six public hearings on the project in June. The commission has until Sept. 30 to review the application and decide on the necessity and placement of the line. The project also still faces a regulatory review in Iowa.

The project's opponents and supporters in Wisconsin have been filing testimony and exhibits daily, and ATC is in the process of deposing witnesses in the case (5-CE-146).

The Cardinal-Hickory Creek line is the last of 17 MISO *multi-value projects* (MVPs) to enter the state regulatory approval process. MISO originally *expected* the project — designed to supplant more than a dozen other upgrades to constrained lower-voltage transmission lines — to be operational between 2018 and 2020.

"It's unfortunate that it's taken as long as it has to get into the regulatory process. ... There are a lot of complicated pieces. But the longer this goes on, the more it's preventing cost-effective resources from coming online," Clean Grid Alliance Executive Director Beth Soholt said in an interview with *RTO Insider*.

The nonprofit is one of a handful of clean energy organizations backing the line's construction. Its members include energy industry participants such as Avangrid Renewables,



Cardinal-Hickory Creek map | Wisconsin Public Service Commission

Invenergy, NextEra Energy and Vestas, as well as groups such as Union of Concerned Scientists, Iowa Environmental Council and National Farmers Union.

Soholt pointed out that when MISO identified the project as part of the 2011 MVP study process, it concluded the line would provide multiple benefits, including reliability, facilitating an economic market and helping meet public policy goals like state renewable portfolio standards.

"When you really look at ticking off all those pieces, Cardinal-Hickory Creek is the best option. This is the appropriate project," Soholt said, adding that about 8,000 MW of existing and proposed wind generation needs the line to deliver energy and mitigate curtailments that are occurring today.

Soholt said that even if planners decide to "upset the apple cart" and forgo the project, the area would likely need a substitute that would contain several similarities to the existing proposal.

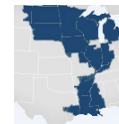
"For this particular purpose — to move the wind and solar megawatts that are being constructed — there is no other option, particular when you need to move electrons across time and space."

She pointed out that MISO generator interconnection studies have long assumed Cardinal-Hickory Creek will be built. If the line isn't built, interconnection customers may have to bear expensive transmission upgrade costs themselves, rendering some generation projects uneconomic and depriving ratepayers of the additional benefits the line will bring, Soholt warned.

"This line has been embedded into the MISO transmission planning and interconnection process for years," she said. "Not constructing Cardinal-Hickory Creek will have a domino effect and cause restudies. Once you start that domino, it will get internalized into other projects, and some simply wouldn't go forward," Soholt said. She pointed to the RTO's increasingly interconnected grid, shifting resource mix and more frequent emergency conditions as evidence of the need for additional transmission in the footprint.

"I don't think I can say strongly enough ... the need for transmission is only increasing, not decreasing."

CGA, Fresh Energy and the Minnesota Center for Environmental Advocacy testified that the project will also reduce Wisconsin's dependence on pivotal suppliers. Grid Strategies Vice President Michael Goggin pointed out



MISO NEWS

that MISO territory in Wisconsin and Michigan's Upper Peninsula had at least one pivotal supplier about 40% of the time in 2017.

A Distributed Future?

But landowners and residents have *said* the project is unnecessary and will impose higher taxes and utility rates, harm property values and agriculture, and destroy portions of the *Driftless Area*.

Opponents include the Driftless Area Land Conservancy and Wisconsin Wildlife Foundation, represented by Howard Learner of the Environmental Law and Policy Center. The two groups say a 627-page draft *review* of the line by the U.S. Department of Agriculture's Rural Utilities Service neglected to consider alternatives that combine lower-voltage lines and investments in battery storage, solar generation and energy efficiency. The agency said each of those separate approaches was impractical, though it didn't consider the alternatives as a package.

"There are out-of-state environmental groups supporting the line, but the in-state environmental and conservation groups in almost all cases are opposing a large transmission line that would cut a wide swath through the scenic Driftless Area," Learner said in a phone interview with *RTO Insider*.

In an agricultural impact *statement* last month, the Wisconsin Department of Agriculture, Trade and Consumer Protection declined to recommend a specific route for the line, saying all proposed routes would "impact significant acres of farmland."

U.S. Sen. Tammy Baldwin (D-Wisc.) recently joined opponents in criticizing the environmental review by the RUS, calling for a "meaningful analysis" of project alternatives and different routes for the line to cross the Mississippi River.

Wisconsin State Sen. Howard Marklein (R) also questioned the need for the project and asked the PSC for a clear and public justification for the project if the commission votes to approve it.

Learner said such a large line is unnecessary and takes issue that the project was never studied in isolation by MISO.

"When the transmission line was included in the MVP package in 2011, it wasn't studied individually; it was studied as a portfolio with the other MVPs," Learner said. "Secondly, the world and electricity sector has obviously changed since 2011."



Rooftop array at the American Family Insurance national headquarters in Madison | *Renew Wisconsin*

In testimony provided by the Wisconsin PSC, electrical engineer Alexander Vedvik said that while the MVP portfolio "as a whole does in fact create benefits greater than the costs of the portfolio, it is entirely possible that one or more projects included in the MVP portfolio have benefits that are lower than the costs." Using ATC's models, the PSC found negative economic benefits were possible in several of the hypothetical cases it studied.

Despite changes over intervening years, MISO still expects benefits from the line. According to the RTO's 2017 triennial *review* of MVPs, eastern Wisconsin would see a benefit-to-cost ratio of 1.9-2.9:1, while western Wisconsin would achieve a ratio of 3.2-4.8:1.

"Wind deployment in Iowa, Minnesota, North Dakota and South Dakota has greatly exceeded the already high level that the MVP projects were designed to serve. As a result, the benefits of and need for the Cardinal-Hickory Creek project are even greater than when MISO's MVP planning process determined the project was needed and provided large net benefits," Goggin said.

But Learner said at the time the MVP portfolio was approved, grid planners were forecasting a 1 to 1.5% annual growth. Since then, electricity sales and demand have flattened.

Learner also said the line was first studied when "solar energy was only a blip." Last month, the Wisconsin PSC *approved* about 450 MW worth of solar development. If realized, the projects will lead to an almost five-fold increase in utility-scale solar generation in the state.

"That's how fast solar is rapidly accelerating in Wisconsin," Learner said. "To some degree, this

case is about the old energy system versus the newer, cleaner distributed grid."

No Need, Opponents Argue

Learner said the line will cost ratepayers a total \$2 billion to \$3 billion locked into rates over a 40-year revenue requirement period "at precisely the time" the industry is rapidly shifting. He likened the energy industry to the telecom industry at the point when cell service was rapidly superseding landlines.

"The world is changing. There's no credible argument that there's a need for imported power in Wisconsin to keep the lights on. I don't think anybody is arguing that Wisconsin needs more imports in order to ensure reliability," Learner said.

Energy companies in Iowa, Minnesota and the Dakotas are building more wind power, Learner argued, but utilities in those states are not shutting down existing fossil fuel plants, leading to excess generation.

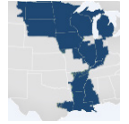
Learner also said the line will support an "unspecified mix" of coal, wind, nuclear and gas-fired generation, not just wind.

The smaller line upgrades that Cardinal-Hickory Creek will render unnecessary, Learner argues, should be proposed on their own if they're needed for local reliability. "If you need to fix local lines, fix local lines. ... Don't force people to pay billions for an entire transmission line," he said.

But Soholt maintains that even a multifaceted alternative strategy isn't a proper substitute for the project. While she foresees growth in distributed resources, she said a major transmission line compared to a distributed solution are "apples and oranges."

"We can't use energy efficiency, distributed resources or other local alternatives to move megawatts in time and space across the MISO footprint. There is just no cost-effective and timely substitute for the existing and future wind and solar projects relying on this line," Soholt said.

"Bringing in distributed resources won't solve the problem. It doesn't deliver the megawatts that are being bottled up right now. It doesn't facilitate the renewable megawatts that are in MISO's interconnection queue right now," Soholt said. "You need a grid to be able to move those resources to where they can be used. The idea that we can do this is without high-voltage transmission is not realistic. The grid is going to become more important as we get more distributed resources." ■



MISO NEWS

Task Team Begins Look at MISO Board Rules

By Amanda Durish Cook

A new MISO task team this month is seeking stakeholder suggestions to improve the process for choosing the RTO's board members.

The newly established Board Qualification Task Team is exploring whether to extend to state regulators a one-year "cooling-off" period required of other industry participants before they can apply to serve on MISO's Board of Directors. The group will also examine other aspects of the board's makeup and required qualifications.

MISO's Advisory Committee created the task team in March following last year's board elections, in which Nancy Lange, then chair of the Minnesota Public Utilities Commission, was nominated to fill a seat on the board without observing the yearlong moratorium. (See [New Task Team to Review MISO Board Rules](#).)

The task team could recommend that the board amend its Transmission Owners Agreement bylaws to adopt improvements, which must be approved by FERC. Neither MISO nor its board is under any obligation to act on Advisory Committee recommendations.

During its first conference call April 30, the small task team decided it will issue a public document should it identify any worthwhile recommendations for changing the board selection process. Those recommendations would be reviewed and possibly taken up by the board's Corporate Governance and Strategic Planning Committee, led by Director Theresa Wise.

However, the task team decided against draft-



The MISO Board of Directors in March | © RTO Insider

ing a white paper on board selection improvements, with Chair Mark Volpe saying such documents should be reserved for technical matters.

In addition to taking stakeholder recommendations, the new team will also review the composition of board nominating committees at other RTOs as possible examples for changing MISO's Nominating Committee, which vets and selects board candidates for stakeholder voting.

The Nominating Committee currently holds slots for two stakeholders and three directors, prompting some Advisory Committee members to criticize its lack of stakeholder

diversity and suggest that MISO should ensure broader representation of stakeholder sectors in selecting board candidates.

Volpe said stakeholders might prefer "broadened and more inclusive" representation and suggested that MISO could add stakeholder seats or rotate sector representation year to year. Task team members may also recommend that directors be required to observe an additional cooling-off period before joining a MISO-related organization after having served on the board.

Volpe asked task team members to come up with draft recommendations in time for the group's May 28 conference call. ■

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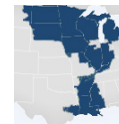
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Rainwater Exit Leaves Open Seat on MISO Board

By Amanda Durish Cook

MISO's Board of Directors will hold a special vote to fill the seat of former Director Thomas Rainwater, who left last month to serve on the board of a for-profit energy company outside the RTO's footprint.

Rainwater was re-elected to the MISO board late last year after having served since early 2015. His new term was set to expire at the end of 2020.

Reached by telephone, Rainwater said he preferred not to reveal the name of the New England waste-to-energy company where he will assume his new role. MISO viewed the two board positions as possibly conflicting.

"Because this opportunity is in a similar or related industry, he is precluded from also continuing as a MISO board member," the RTO said in a release. It has removed Rainwater's entry from its leadership [webpage](#).

MISO [bylaws](#) stipulate that the board must hold a special vote to fill a vacancy stemming from a director departing before their term expires.

Directors will evaluate a pool of candidates provided by an outside executive search firm. Candidates must have the same type of qualifications as the departing board member, and the selected candidate will serve out the remainder of their predecessor's term.

The special board vote has not yet been scheduled.

Rainwater has 30 years of experience in both the electricity and natural gas sectors and has chaired the board's Corporate Governance and Strategic Planning Committee and the Audit and Finance Committee.

"Tom has been very generous in sharing his broad experience with the board, MISO staff and our stakeholders over the last four years," Chair Phyllis Currie said.

Rainwater said he enjoyed his time on the on the board and was leaving with "nothing but praise" for MISO and its work.

Rainwater's exit comes as a special Advisory Committee task team is re-examining the RTO's board qualifications, including the possibility of requiring departing directors to



Thomas Rainwater | © RTO Insider

observe a "cooling-off" period before joining a MISO-related organization. (See related story, [Task Team Begins Look at MISO Board Rules](#).) Directors drawn from MISO-related companies are already subject to a yearlong industry moratorium before taking a seat on the board. ■

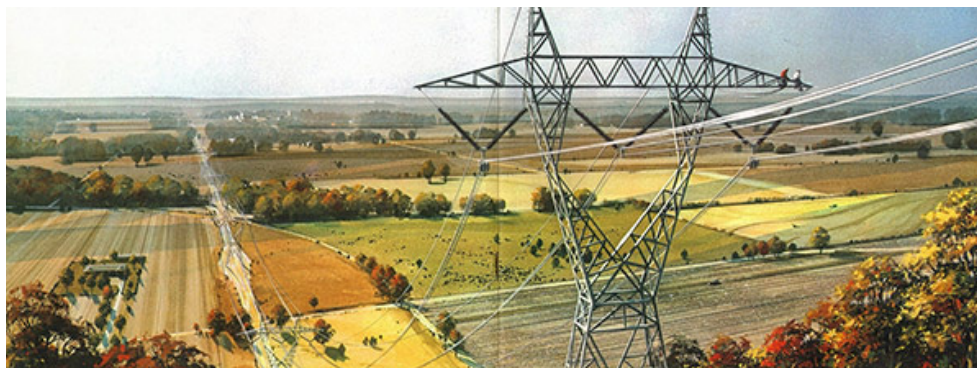
FERC Takes 2nd Look at Entergy Arkansas ROE

FERC is re-evaluating how its 2018 decision on transmission owners' return on equity might affect Entergy Arkansas' unit power sales tariff from 2013.

The commission April 30 said it could determine a new ROE for Entergy Arkansas and issued an order directing submission of briefs and additional written evidence ([ER13-1508-001](#)).

The issue dates back six years, when Entergy Arkansas decided to leave the Entergy System Agreement and join MISO. As a result, Entergy Arkansas created a unit power sales tariff that passed through MISO's ancillary and uplift charges and credits, along with the RTO's 11% ROE for TOs. Both the Louisiana Public Service Commission and the city of New Orleans protested Entergy Arkansas' use of the rate. Using the 2014 Opinion 531 that set the ROE for transmission owners in New England, an administrative law judge in 2015 found that 9.01% was reasonable in Entergy Arkansas' case.

But with Opinion 531 vacated in 2017 and no



| Entergy Arkansas

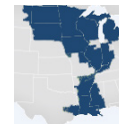
longer serving as precedent, FERC wants a fresh look at Entergy Arkansas' ROE. As of last year, the commission said it will no longer rely only on the discounted cash flow (DCF) model, instead using a combination of DCF and the capital asset pricing, expected earnings and risk premium models. (See [FERC Changing ROE Rules; Higher Rates Likely](#).)

"Accordingly, we direct the participants to this proceeding to submit briefs regarding the

proposed new methodology for determining just and reasonable ROEs ... and whether and how to apply it to the unit power sales tariff," FERC said.

The commission added that participants in the case "are free to present evidence supporting the proposed new methodology or supporting a different or revised new methodology." Briefs are due in two months. ■

— Amanda Durish Cook



MISO NEWS

MISO Reliability Subcommittee Briefs

MISO Taking Second Look at Outage Change Penalties

CARMEL, Ind. — MISO will reconsider its penalty exemption policy for already submitted transmission outages, officials told the Reliability Subcommittee May 2.

Under new outage scheduling rules effective April 1, MISO will exempt from penalties planned outages scheduled 120 days or more in advance. Penalties for outages scheduled 119 days to 14 days in advance occur only when MISO's maintenance margin tool predicts scant resources to cover operations. Outages scheduled fewer than two weeks in advance are subject to generator accreditation penalties if they don't alter their outage timeline to move out of MISO-defined periods of capacity concern. The rules also dictate that to receive a penalty exemption, the same unit cannot take multiple outages within a 120-day period. (See [FERC OKs MISO Outage Scheduling Rules, DR Testing](#).)

At the May 2 meeting, stakeholders questioned how MISO might apply accreditation penalties to already planned outages.



Trevor Hines | © RTO Insider

Under the new rules, MISO shift operator Trevor Hines said, unit owners must submit a new outage request in order to extend an outage already in progress. For outages yet to begin that require a timeline change, unit owners must submit a change request to MISO, which will reevaluate the requested outage based on maintenance margin supply predictions. The reevaluation would put a unit's previously approved outage at risk of losing its penalty exemption.

Stakeholders asked why MISO would reevaluate shortened outages, questioning how a truncated outage could possibly impact reliability negatively.

"This seems counterintuitive," MidAmerican Energy's Greg Schaefer observed.

Several asked MISO to consider not putting penalty exemptions at risk when a unit is returned early from a planned outage.

Hines said the reevaluation seeks to gauge the impact on other unit outages. He said it's extremely unlikely that returning early from an

outage would cause a dip in capacity projections.

Jeanna Furnish, MISO manager of outage coordination, said MISO will reevaluate that piece of the new outage rules. She said the focus is only to make sure MISO is aware of early or delayed returns. Hines promised to return to the Reliability Subcommittee with clarifications.

"We do want you to bring your unit back as soon as it's appropriate and safe to do so. I am hearing that there's a perception that this is a bad incentive," Furnish said.

MISO: \$2 Million in Penalties for Jan. 30 LMR Underperformance

Less than a quarter of load-modifying resources responding to a late January emergency event performed to MISO standards, the RTO has concluded.

As a result, MISO will issue nearly \$2 million in penalties to 26 market participants for underperformance. The RTO also disqualified 21 LMRs for the remainder of the 2018/19 planning year for nonperformance and will assess them \$500,000 in penalties. Penalties will be assessed May 31. When LMRs fail to perform, MISO derates the resource proportionally for the rest of the year.

MISO deployed 180 LMRs on Jan. 30; this marked the first time MISO has called on LMRs in the north and central regions of the footprint. (See [MISO: Winter Emergency Another Signal for Grid Ops Change](#).)

Though the LMRs managed to meet MISO's scheduling instructions 75% of the time on average through the worst of the cold snap, MISO said its measurement and verification criteria found widespread under-delivery of demand reduction megawatts. MISO said only 103 of 502 LMRs called on during the event met MISO's Tariff-defined compliance standards across all hours of the emergency event. LMR performance gradually improved from about 69% of megawatts requested delivered to 97% over the five hours of LMR use.

MISO analyst Scott Thompson said LMR owners should work on making their availability to MISO more accurate.



Scott Thompson | © RTO Insider

While MISO LMRs do not have to be available for MISO scheduling instruction outside of the summer months, MISO does require that LMRs communicate their unavailability via the MISO Communication System. LMRs can submit availability up to seven days in advance.

"Correct LMR availability is critical to our real-time operations. LMRs need to ensure that availability aligns with their resource capability," Thompson said.

Thompson also said many LMRs provided more megawatts than MISO requested. He said while the excess was "a good thing," it also illustrates that LMRs are not providing their most up-to-date capabilities to MISO. He also said all LMRs at least acknowledged scheduling instructions on Jan. 30.

Thompson also granted that the MISO Communication System — where LMR owners update their availability — "may not be the prettiest tool we have." The system is currently undergoing an overhaul as part of MISO's multiyear effort to replace its current market platform with a new cloud-based, modular platform.

MISO has contacted all 26 LMRs owners facing penalties to discuss the event and their penalty amount, Thompson said.

"Everyone was given an opportunity to share and discuss their performance with MISO," he said.

Customized Energy Solutions' Ted Kuhn said LMR penalties might need to be reassessed since MISO now requires LMRs to submit year-round availability. (See [MISO LMR Capacity Rules Get FERC Approval](#).) He said the penalties were originally designed to be harsher than penalties for generators because of LMRs' shorter availability requirements. Now that LMRs must commit to providing availability in all seasons, Kuhn said MISO might consider LMR penalties that look more like generation penalties.

Kuhn also asked if there was a tipping point of how many LMRs MISO can handle in its resource mix. The use of LMRs, which can only be accessed in a declared emergency, has been steadily growing in the footprint over the last few years. RSC Chair Bill SeDoris said the exploration of an LMR saturation point will be added to the committee's management plan for discussion in the third quarter of this year. ■

— Amanda Durish Cook



NYISO Grid at 'Inflection Point,' Report says

By Michael Kuser

NYISO's electricity markets have reached an "inflection point" as new technologies and "ambitious" public policy goals require the ISO to develop measures to manage the grid's "next evolution," according to the ISO's annual Power Trends report released Thursday.

Last year's report covered the implications of state policies calling for 50% of the electricity consumed by New Yorkers to come from renewable sources by 2030.

"A year later, however, policymakers seek even more aggressive goals of 70% renewable energy by 2030 and 100% clean energy sources by 2040," NYISO Executive Vice President Rich Dewey said in a press briefing to discuss this year's report. The report noted that the ISO is working with stakeholders and policymakers to finish a plan to price CO₂ into wholesale markets to support the state's goal of reducing emissions. (See [More Details Divulged on New NYISO Carbon Pricing Study](#).)

Dewey also highlighted a February proposal by the state's Department of Environmental Conservation to require peaking units to reduce their emissions of smog-forming pollutants.

"The proposed new rule, which calls for phasing in compliance obligations between 2023 and 2025, could impact approximately 3,300 MW of simple cycle turbines in New York City and Long Island," he said.

The ISO is engaged in the rule development process and will work to inform policymakers, market participants and investors of the rule's implications for bulk and local system reliability, but it had no plans to testify at a Tuesday DEC hearing on the subject in Albany, Dewey said.

NYISO has initiated the second phase of its 2018/19 Comprehensive Reliability Plan, which includes a study scenario evaluating the reliability impacts of a potential retirement of all 3,300 MW of peaking units impacted by the DEC's proposal.

Changing Grid and Goals

"Another trend is the recognition of the need to pay attention to the power transmission infrastructure within New York, both from a transmission and from a generation standpoint, which is aging and needs to be reinvested in to ensure we maintain reliable operation of the system," Dewey said.

He also highlighted the need to maintain a resilient grid "in light of an uptick in severe storms" and other issues related to climate change.

The Power Trends report also points to a 10-year trend of declining electricity demand in New York, partly because of economic changes, but also increased energy efficiency. The ISO sees demand continuing to decline on EE and behind-the-meter resources, predominantly solar, Dewey said.

"When we look at peak demand, the impact of energy efficiency and behind-the-meter solar will continue to flatten and slightly decrease the need for peak as we move forward into the future," he said.

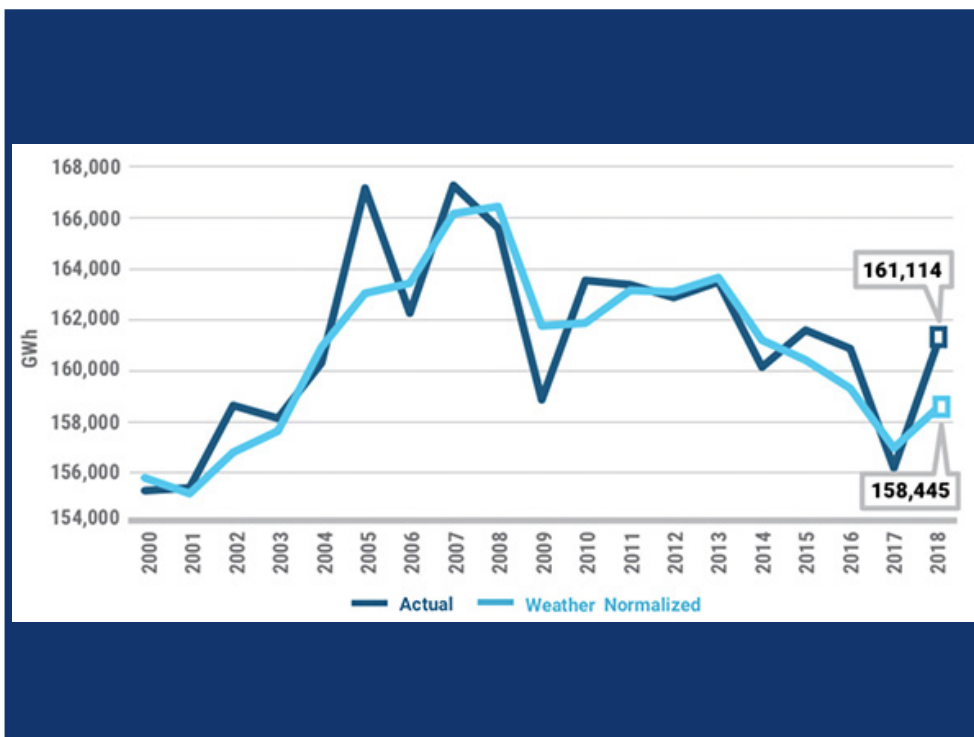
Dewey also pointed to the opportunity for storage to become a valuable resource for grid management. The Public Service Commission in December doubled New York's storage goal to 3,000 MW by 2030 and required the state's utilities to reduce building energy use by an additional 31 TBtu to meet an EE target of 185 TBtu by 2025. (See [NYPSC Expands Storage, Energy Efficiency Programs](#).)

A countertrend to EE is the increasing adoption of electric vehicles, which will put upward pressure on peaks, with a greater impact in winter than in summer because the peak occurs in the evening, which coincides with consumer EV charging habits, Dewey said. The new report takes its load data from the 2019 Gold Book, NYISO's annual load and capacity forecast, which this year shows EV usage driving a 66% increase in New York's projected baseline peak demand growth rate over the next two decades. (See [NYISO Draft Gold Book Shows EVs Driving Load Growth](#).)

The report emphasized the ISO's faith in competitive markets to provide incentives for investment in renewable resources and finance a more robust transmission system to move power to load.

Absent such infrastructure upgrades, investment in upstate New York renewables could yield diminishing returns for the state's effort to boost renewable energy output and reduce carbon emissions, Dewey said.

"The NYISO believes that competitive wholesale electricity markets remain central to facilitating the accelerated changes policymakers have proposed in a way that will support system reliability and economic efficiency," the report said. ■



Annual electric energy usage trends in New York from 2000 to 2018. | NYISO



Monitor: PJM Simulation Underestimates ORDC Impact

By Christen Smith

PJM's Independent Market Monitor said the RTO's updated simulation results for energy price formation underestimate the impact of its operating reserve demand curve (ORDC).

In its own *analysis* released Friday, the Monitor said PJM's decision to rely on dispatch conditions that allow the software to decommit resources otherwise required for reliability "presents a significant departure from reality" and results in understated market impacts.

At an April 10 Market Implementation Committee meeting, PJM's Adam Keech said changing unit commitment based on real-time instead of day-ahead market runs — otherwise known as "Case C" in simulations — increased LMPs, boosted energy revenues and cut uplift by more than 80% compared with the status quo, which staff referred to as "Case A" in simulations. (See "ORDCs Shrink in Updated Energy Price Formation Simulation," *PJM MIC Briefs: April 10, 2019*.)

By applying PJM's proposed ORDC and 30-minute reserve market to conditions set in

"Case B," the simulation increased LMPs by an average of 46 cents/MWh, assigned an additional 1,350 MWh of synchronized reserves and 3,337 MWh of secondary reserves, and generated \$550 million more in total energy and reserve market revenues, Keech said.

"If it is the case, and PJM implies that it is, that the ORDC would replace manual operator commitments with market commitments, the relevant comparison is Case A to Case C, because Case A contains the steam unit commitments made by operators," the Monitor said. "Case B removes all uneconomic operator commitments."

The Monitor's simulation compared Case C to Case A — defined as PJM's optimal dispatch conditions — to get what it considers a better measure of real-life market impacts. The Case A to Case C comparison shows less uplift, higher LMPs and revenues, with larger impacts than PJM's Case B to Case C comparison.

The Monitor further cautioned that even Case A conditions do not represent the "actual status quo," and using it as a benchmark still underestimates real-world costs of PJM's

proposed ORDC approach.

The Monitor's simulation of an ORDC based on 15-minute forecast errors, compared to PJM's 30 minutes, resulted in lower price and revenue differences.

"The Market Monitor disagrees with PJM's conclusion that a 30-minute time horizon is appropriate for the 10-minute reserve products," the Monitor said. "Case C 15-minute presents a case where the ORDC is shifted inward using a 15-minute forecast time horizon for the synchronized and primary reserve demand curves."

On Monday, PJM spokesperson Jeff Shields said the RTO stands by its filing and disagrees with the Monitor's opinion.

"PJM's simulation analysis was intended to reflect and isolate the impacts of implementing the enhanced ORDCs," he said. "While PJM acknowledges that there will also be benefits in the form of more optimal commitment and dispatch solutions, PJM does not agree that the entire difference between Cases A and C in the IMM report reflect the anticipated impact of the changes PJM filed on March 29." ■

	Case A	Case B	Case C	Case A ORDC	Case C 15
Load Weighted LMP (\$/MWh)	\$35.80	\$37.30	\$37.76	\$36.91	\$37.61
Generator Weighted LMP (\$/MWh)	\$33.29	\$34.72	\$35.18	\$34.39	\$35.03
Generator Energy Revenue (\$ millions)	\$26,796.6	\$27,943.2	\$28,312.6	\$27,679.3	\$28,191.9
Weighted Synchronized Reserve MCP (\$/MWh)	\$1.99	\$2.58	\$6.33	\$6.05	\$4.66
Weighted Non-Synchronized Reserve MCP (\$/MWh)	\$1.03	\$1.25	\$3.21	\$3.08	\$2.34
Weighted Secondary Reserve MCP (\$/MWh)	NA	NA	\$0.0004	\$0.0004	\$0.0015
Hourly Average Cleared Synchronized Reserve (MW/hour)	1,817.8	1,818.2	3,167.3	3,189.6	2,866.6
Hourly Average Cleared Non-Synchronized Reserve (MW/hour)	634.6	634.2	677.6	678.1	677.3
Hourly Average Cleared Secondary Reserve (MW/hour)	NA	NA	1,944.0	1,928.2	2,195.2
Hourly Average Cleared Total Reserve (MW/hour)	2,452.4	2,452.4	5,789.0	5,795.9	5,739.0
Total Cleared Synchronized Reserve (millions MWh)	15.5	15.5	27.0	27.2	24.4
Total Cleared Non-Synchronized Reserve (millions MWh)	5.4	5.4	5.8	5.8	5.8
Total Cleared Secondary Reserve (millions MWh)	NA	NA	16.6	16.4	18.7
Reserve Revenue (\$ millions)	\$36.4	\$46.7	\$189.3	\$182.1	\$127.3
Uplift (\$ millions)	\$109.9	\$30.4	\$27.5	\$93.0	\$28.0
Bid Production Cost (\$ millions)	\$13,229.6	\$13,121.2	\$13,152.0	\$13,256.8	\$13,135.8
Total Energy and Reserve Market Revenues (\$ millions)	\$26,833.0	\$27,989.9	\$28,501.9	\$27,861.5	\$28,319.2

Summary results for the five simulation cases | *Monitoring Analytics*



Pa. Democrats Back Renewables Subsidy Expansion

By Christen Smith

Pennsylvania Democrats want to nearly quadruple subsidies for renewable resources in the first tier of the state's 2004 Alternative Energy Portfolio Standards (AEPS) mandate, hoping the expansion will push the state closer to its looming carbon-reduction goals.

Rep. Carolyn Comitta and Sen. Art Haywood sponsored companion proposals — [House Bill 1195](#) and [Senate Bill 600](#) — on April 26 that they say would “modernize” the once forward-looking AEPS and bring it in line with neighboring states like Maryland and New Jersey, where lawmakers have passed ambitious energy plans to phase out fossil fuels over the next 30 years. The bills would boost the usage requirement of Tier 1 renewable resources in the AEPS from 8% to 30% by 2030. The plans also dedicate 7.5% of that target to in-state grid-scale solar and 2.5% to distributed solar generation and asks the Public Utility Commission to study the benefits of an energy storage program.

“It is long overdue for Pennsylvania to implement new clean energy goals to create good jobs, cut pollution and ensure we are a sustainable and prosperous state for the future of everyone,” Haywood [said](#) during a rally April 10 with fellow co-sponsors from the bicameral Pennsylvania Climate Caucus.

“The fierce and immediate urgency of climate change requires a fierce and immediate response,” state Rep. Steve McCarter (D) [said](#). “Thirty by 30 is an excellent immediate goal. It’s reasonable and achievable. It creates jobs in Pennsylvania. And, most importantly, it sets the stage for the much tougher work to come.”

The legislation has 33 sponsors in the House of Representatives, where Republicans hold a 109-93 edge, and 18 in the Senate, where the GOP holds a 26-22 margin. Only one of the co-sponsors, Sen. Thomas H. Killion, is a Republican, but he is also vice chair of the Consumer Protection & Professional Licensure Committee, which is also considering subsidies for the state’s nuclear generators.

Gov. Tom Wolf, a Democrat, said he supports the proposals as in line with his own environmental policies, including his decision to join the U.S. Climate Alliance announced April 29. (See [Pennsylvania Joins US Climate Alliance](#).)

In January, Wolf signed an executive order committing the state to reducing its greenhouse gas emissions by 26% over the next



State Sen. Art Haywood, flanked by fellow Democrats, speaks at a rally April 10 about his bill to expand renewable subsidies in the Alternative Energy Portfolio Standards (AEPS) law. | [Sen. Art Haywood](#)

seven years compared to 2005 levels and setting an additional target of 80% by 2050. On April 29, the administration released a third update to the state’s decade-old Climate Action Plan that identified 15 steps toward reducing carbon emissions by 21% by 2025, including investing in renewable energy resources, boosting the use of electric vehicles and incentivizing green building projects.

As of 2017, Pennsylvania ranks as the second largest producer of natural gas nationwide and third for coal, according to the U.S. Energy Information Administration. Just 4.5% of the state’s net electric generation comes from renewable energy resources — well short of the 18% goal by 2021 set in the AEPS.

Critics argue forcing electric suppliers to buy more power from renewable sources will set off a cascade of unintended consequences that threaten the wholesale market.

“In the words of the Independent Market Monitor, subsidies are contagious,” said Glen Thomas, president of GT Power Group. “Sub-

sidies distort markets as policymakers attempt to favor certain resources at the expense of others.”

Thomas, an outspoken fan of deregulated electricity markets, said subsidies interfere with consumer choice. He has criticized plans to add nuclear energy to the AEPS during hearings before the House Consumer Affairs Committee and the Senate Consumer Protection and Professional Licensure Committee.

“As the cost of renewable energy continues to drop, more and more consumers will voluntarily switch to these resources and power producers will respond to the needs and wants of consumers,” he said. “That’s how markets work, and they should be allowed to do so free of mandates on consumers.”

Comitta said on April 30 she remains open to adding nuclear energy to the AEPS. So far, the House Consumer Affairs Committee has not yet scheduled any hearings on her plan, though discussions continue on nuclear subsidies. (See [Nuke Talks Continue in Pa. Assembly](#).) ■

PJM NEWS



FERC Upholds PJM Monitor's Right to Protest Fuel-cost Policies

By Christen Smith

FERC last week said that the Independent Market Monitor's filing of complaints regarding PJM's fuel-cost policies doesn't violate Tariff conditions or commission rulings, ending — for now, at least — a long-simmering debate over the extent of the IMM's authority ([ER16-372](#)).

The commission denied the RTO's request for clarification regarding the Monitor's ability to file complaints regarding issues besides market seller offers in capacity auctions.

The Monitor had protested PJM's August 2016 proposed Tariff revision regarding the fuel-cost policies that generators submit showing how they calculated their cost-based offers. It said the RTO was trying to usurp its authority to regulate the policies. (See [PJM Attempting to Usurp Market Mitigation Role, Monitor Says](#).)

FERC ultimately sided with PJM in February 2017, saying the changes didn't alter the fundamental roles of the RTO and the Monitor,

“but rather [they] codify the role of the IMM in advising and providing input to PJM in its determination of whether to approve a fuel-cost policy submitted by a market seller.”

But FERC also rejected PJM's proposal that any disputes between PJM and the Monitor be referred to the commission's Office of Enforcement, saying that was the province of its administrative law judges.

When the RTO filed further changes on compliance in March, it also filed the clarification request, questioning whether the commission intended “to enable the IMM to initiate a complaint against PJM” when they disagreed over the policies.

“Although PJM is correct that its Tariff explicitly delineates one instance in which the IMM has the right to file a complaint with the commission, the inclusion of an express right to bring a complaint does not necessarily foreclose an entity's general right to file complaints under Section 206 of the [Federal Power Act],” the commission said. “In any case, we need not reach that issue here because we

are unpersuaded by PJM's narrow reading of Attachment M” of its Tariff.

FERC accepted PJM's March 2017 compliance filing in the same order. (See [FERC Seeks More Details on PJM's Fuel-Cost Policy Proposal](#).) The commission accepted the RTO's clarifications on several issues, including:

- Clearly specifying when a penalty for non-compliance with a fuel-cost policy would be terminated by PJM.
- Allowing a new resource a 90-day time period before it submits its fuel-cost policy.
- Specifying that a market seller may only update its minimum run time for the uncommitted hours in real time and that a market seller's make-whole payment be based on the minimum run time specified at the time of commitment.

The Tariff and Operating Agreement revisions for the penalty structure became effective May 15, 2017, and the rest of the provisions Nov. 1, 2017. ■

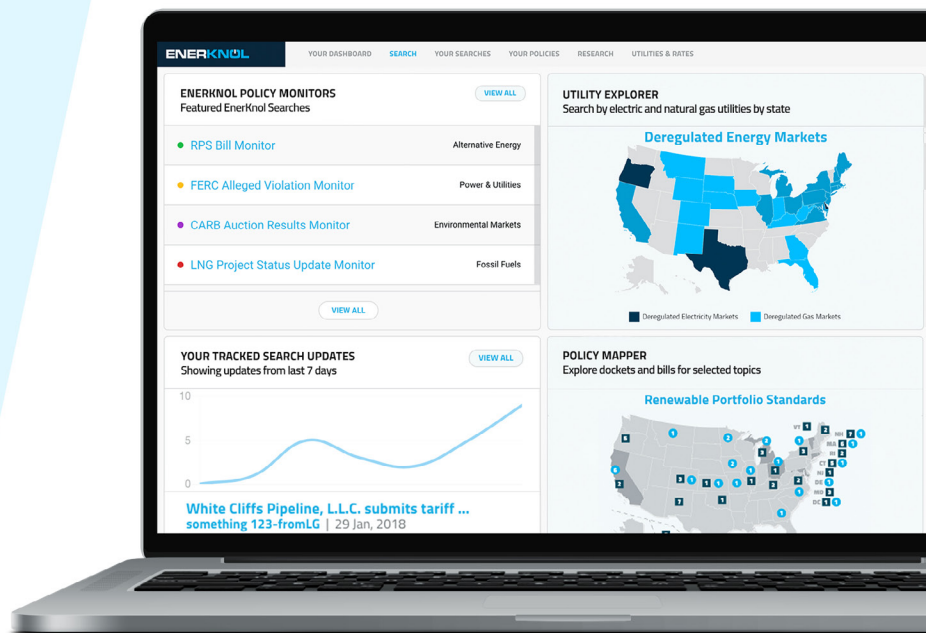
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PJM Monitor Defends Offer Cap Complaint

By Christen Smith

The Independent Market Monitor last week fired back at PJM’s request that FERC dismiss its complaint about the RTO’s default market seller offer cap (MSOC), saying the grid operator lacks understanding of the core problem.

In an April 30 filing with the commission, the Monitor scoffed at PJM’s defense that its initial complaint, filed in February, didn’t prove that current rules encourage abuse of market power (EL19-47). The RTO had also argued that it is unlikely that previous Base Residual Auctions “suddenly became unjust and unreasonable” after FERC’s approval of its Capacity Performance construct just four years ago. (See [PJM: Dismiss Monitor’s Offer Cap Complaint](#).)

“The assertion that the system conditions have not ‘drastically changed’ since 2015 has no basis in fact and would surprise any objective observer of PJM markets,” the Monitor wrote.

In PJM’s capacity auctions, the default MSOC functions as the “mitigated” offer level, with offers coming in above that level automatically prompting a review for market power by the Monitor. The IMM’s longstanding complaint

remains that PJM’s default MSOC has been inflated by the “unreasonable and unsupported” expectation of 30 performance assessment hours (PAHs) annually. As a result, the Monitor said, it has been prevented from effective mitigation of market power, able to subject only a small number of very high offers to unit-specific cost reviews.

The timespan for measuring performance was changed from PAHs to five-minute performance assessment intervals (PAIs) in compliance with FERC Order 825 in 2018. PJM triggers a PAI when it determines a supply reliability issue exists, providing credits for generators that overperform their capacity commitments and penalties for those that underperform.

So far, only one load shed event has occurred within PJM since the CP overhaul in 2015. The event spurred stakeholder action to revise the MSOC calculation, with four proposals failing to garner enough support for inclusion in the Tariff. PJM subsequently dropped the issue, insisting no further investigation was required. (See [PJM MRC/MC Briefs: Oct. 25, 2018](#).)

“Stakeholders’ role is not to make evidentiary

determinations,” the Monitor wrote. “That a stakeholder body with divergent financial interests could not agree on another number to use for the expected PAI, with its significant implications for the market seller offer cap and/or the penalty rate, is not justification for PJM’s inaction.”

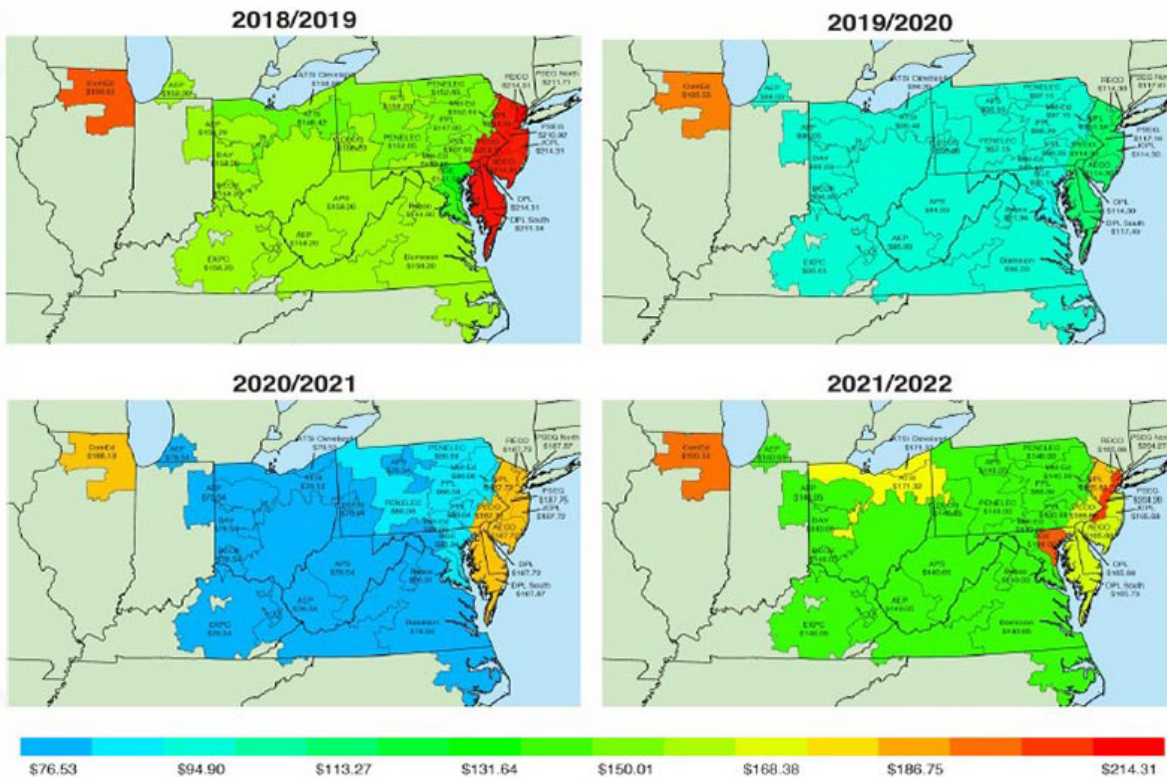
In August, the Monitor concluded that ratepayers were overcharged by \$2.7 billion (41.5%) in the 2018 BRA because of economic withholding encouraged by the inflated MSOC.

“That an overstated MSOC interferes with effective and efficient market power mitigation is undisputed,” the Monitor wrote, noting that PJM “knows the exact details” of which companies and units asserted market power in the 2021/22 BRA.

Further, the Monitor referenced commission directives that instruct PJM to submit five-year informational reviews to evaluate existing rules and reassess the PAHs after gaining experience using the new market design. Auctions “repeatedly” clearing “well below” the default MSOC and with installed reserve margins well above target provides sufficient evidence of a problem.

“The 30 PAH was clearly overstated at the time, even based on the polar vortex experience, and the evidence since 2014 shows that the Capacity Performance model and incentives have resulted in a significant reduction in forced outages, an improvement in incentives and performance, an increase in reserves, and that the 30 PAH is even more overstated today,” the Monitor concluded.

The MSOC issue remains just one of seven outstanding PJM-related dockets with FERC. The Monitor reiterated its belief that the RTO should hold off on all future BRAs until the commission rules on the MSOC — despite PJM’s commitment to move forward with the August auction as planned. ■



Capacity prices | Monitoring Analytics



Pa. Lawmaker Contends TMI Rescue Unlikely

By Christen Smith

Three Mile Island's fate looks bleaker by the day as Pennsylvania lawmakers on Monday wrapped up a series of hearings that considered subsidizing the state's nuclear fleet, with some concluding even legislative intervention won't save the infamous facility.

House Consumer Affairs Committee Chairman Brad Roae (R) said consideration of House Bill 11 will weigh a complex mix of impacts on the state's economy, energy prices and environmental goals but will likely not make enough difference to prevent TMI from closing in September.

"Even if we did do this, it doesn't seem like TMI is economically viable," he said while concluding the committee's fourth public hearing on the issue. "If we did do this, it would close. If we don't do this, it would close."

Exelon-owned TMI contains one of the state's nine nuclear reactors and will begin the months-long deactivation process on June 1 amid dwindling profits as cheaper fossil fuels set prices in the wholesale electricity market.

"If these facilities are lost, they will be replaced primarily by natural gas-fired generators — not wind and solar," said Kathleen Barron, Exelon's senior vice president of government and regulatory affairs, in submitted testimony. "Carbon and other harmful emissions will increase. Grid resilience will deteriorate. And costs to

consumers will go up."

One way to fix this, some state lawmakers believe, is to incorporate nuclear power into the state's Alternative Energy Portfolio Standard (AEPS) program. The AEPS provides tax credits for renewable resources spread across two tiers from which electric distributors must buy 18% of their power by 2021, though recent proposals in both the House and Senate want to push this goal to 30% by 2030. (See [Pennsylvania Democrats Back Renewables Subsidy Expansion](#).)

HB 11 — and the similar Senate Bill 510 — would create a third tier in the AEPS from which suppliers must buy an additional 50% of their power by 2021. (See [Pa. Lawmakers Unveil \\$500M Nuke Subsidy Bill](#).) The new credits would cost ratepayers as much as \$550 million each year, making it larger than any other subsidy program nationwide.

Both Exelon and FirstEnergy said HB 11 levels the playing field against polluting fossil fuel plants and appropriately values the carbon-free, reliable power reactors provide 24/7, 365 days a year. FirstEnergy will likely retire its Beaver Valley reactors in 2021 as the company wades through Chapter 11 bankruptcy proceedings. (See [Judge Rejects Liability Release in FirstEnergy Reorg](#).)

PJM's Independent Market Monitor said in March three of the RTO's 18 nuclear facilities face revenue shortfalls through 2021. The

three plants — Davis-Besse, Perry (both in Ohio) and TMI — each operate just one reactor. The remaining multi-unit facilities, including the subsidized Quad Cities in Illinois, will remain profitable. Even without ZECs, Quad Cities would cover its costs for the next three years, according to the Monitor. (See [Monitor Says PJM's Capacity Market not Competitive](#).)

Barron has said the Monitor's prior estimates of profits and losses across Exelon's three Pennsylvania plants were based on "inaccurate" data. The Monitor previously concluded TMI lost \$37 million in 2018, while the Peach Bottom and Limerick plants earned a combined \$350 million. (See [Nuke Talks Continue in Pa. Assembly](#).)

Paul Adams, an Exelon spokesperson, clarified on Monday that TMI will remain open if HB 11 passes before June 1. "Absent passage by June 1, TMI will shut down in September," he said.

Market Impact

Stu Bresler, PJM's senior vice president of operations and markets, told the committee the grid operator takes no position on either of the bills pending before lawmakers.

"That PJM is neither advocate nor opponent of HB 11 should not, however, be taken as an indication the bill lacks potential impact or consequence to our markets under their current format and structure," he said, citing a FERC ruling that determined out-of-market nuclear subsidies were distorting PJM's capacity market.

Bresler also pushed back against the oversimplification of PJM markets that some testifiers have said values the cheapest price for the next five minutes. He noted the RTO manages multiple markets that balance its resource mix and maintain reliability — not just for the next five minutes but for as many as 15 years in the future.

"It is true that PJM's markets do not inherently value carbon-free generation," he said, noting "externalities" like carbon emission are not valued in markets without corresponding state policy setting a price. "The omission of such an externality is by no means unique to PJM's markets. PJM's markets can, however, be leveraged to bring the benefits and discipline of competition to a state's carbon mitigation policy goals, but it requires that state to authorize a cost to be assigned to those carbon emissions." ■



Exelon's Three Mile Island



HITT Shares Draft Report with SPP Stakeholders

By Tom Kleckner

TULSA, Okla. — SPP’s Holistic Integrated Tariff Team (HITT) last week shared with stakeholders the result of a year’s worth of work: a draft report of high-level recommendations addressing the footprint’s many challenges.

Now comes the hard part: taking action on the recommendations.

“There’s a heck of a lot of work that’s left,” HITT Chair Tom Kent said during SPP’s April 29 joint quarterly stakeholder briefing. “The working groups will have a lot of effort to put these [recommendations] into actual action.”

Kent, COO for Nebraska Public Power District, said the HITT report makes 21 recommendations in four categories: reliability, marketplace, planning and cost allocation, and strategy. Thirteen of the recommendations, some of which are already in progress, are planned for implementation; the other eight require further study.

The big-ticket cost-allocation recommendations include decoupling Schedule 9 and Schedule 11 transmission pricing zones and allowing the creation of larger Schedule 11 pricing zones and/or Schedule 9 sub-zones. The HITT proposes that if the Regional State Committee adopts a policy to reallocate existing costs within the new pricing zones, it should be done over a five- to 10-year transition period to mitigate cost shifts.

The HITT is also recommending SPP determine whether transmission projects below 300 kV can be fully allocated on a regionwide basis; use incremental long-term congestion rights instead of Attachment Z2 credits as compensation for new sponsored upgrade projects; and evaluate whether it can establish cost allocation and rates under the Tariff for energy storage resources.

The team also recommends SPP continue to improve the Integrated Marketplace by including fast-start resource logic, ramping capability and a multiday, longer-term market product, and to continue developing a market mechanism to hedge load against congestion charges.

Kent said the report is a “tribute to the team working hard and working together, and coming to a strong consensus on the recommendations.”

A proposed action plan assigns the recommendations to various stakeholder groups. A

Reliability

- Essential & other reliability services
- ERS/ORS compensation model
- Market enhancements
- Uncertainty market product
- Additional operational tools

Marketplace

- Congestion hedging improvements
- Offer requirements for variable resources
- Study automatic mitigation unduly low offers
- Economic evaluations of reliability

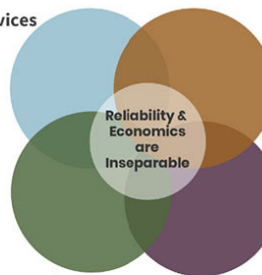


Planning & Cost Allocation

- NRIS/ERIS modifications
- Uniform Sch. 9 planning criteria
- New load addition modifications
- Three-phase GI process effectiveness
- B/C ratio for economic projects
- Decouple Sch. 9 & 11 pricing zones
- Byway cost allocation review process
- Z2 replacement
- Cost allocation for transmission storage

Strategic

- Technological advances
- Keep seams a priority
- Storage white paper



HITT’s recommendations | SPP



HITT Chair Tom Kent (left) confers with his vice chair, Dogwood Energy’s Rob Janssen. | © RTO Insider



Stakeholders prepare for SPP’s quarterly briefing session. | © RTO Insider

timeline anticipates the work being completed by mid-2021.

Larry Altenbaumer, chair of SPP’s Board of Directors, called the HITT’s work “an example of the very best of SPP.”

“We fully recognize 85% of the work is in front of us,” he said. “It’s an exciting beginning of a very important next step for us. I think HITT’s going to be a good thing for us.”

“The industry is changing as rapidly as many of us who’ve been around for a long time have seen it change,” said HITT member Dennis Grennan, a commissioner with the Nebraska Power Review Board. “We must prepare for major changes coming in the next five to 10 years. It’s a real challenge, but it needs to be done so that our consumers back home truly benefit from belonging to SPP and all that

comes with it.”

Kent promised a final report by the end of June and said that a final product will be brought to the July stakeholder meetings. He said it will be discussed in detail with the Strategic Planning Committee during its May 9 planning retreat.

The RSC has scheduled in-person meetings with the HITT on May 30 and June 24, and Altenbaumer asked for a workshop to be scheduled where stakeholders can participate in a “top-to-bottom” discussion of the report.

The SPP board charged the HITT with developing recommendations for holistic improvements within the system. The team is composed of 15 board members, state regulators and SPP members. (See *SPP’s Tariff Team Begins Carving up the Elephant.*) ■



SPP Board of Directors/Members Committee Briefs

RTO Getting 'More Specific' About vvvWestern Market Offerings

TULSA, Okla. — SPP is stepping up its bid to offer market services in the Western Interconnection, with interested participants approaching the RTO for more details on its proposal.

CEO Nick Brown told the RTO's Board of Directors and Members Committee on April 30 that "many" Western entities have asked SPP "to put very specific proposals on the table." He said the requests are based on the RTO's experience operating energy imbalance service and day-ahead markets.

"We have a model we believe is in the best interest of parties in the West," Brown said. "Rather than go out and say, 'OK folks, what is it that you want?' — we're going to take a much stronger leadership role to put a proposal on the table."

SPP said last month it was asking Western utilities and other industry participants to help build a real-time market that would compete with CAISO's Western Energy Imbalance Market. (See [SPP Solicits Interest in Western Real-time Market](#).)

Rather than listen to proposals from Western entities, Brown said the grid operator is going to take a more proactive role.

"I've been asked by participants in the West to do that," he said. "It's a wonderful strategic opportunity."

Brown also told the board and stakeholders that SPP faces three "concerning items" in the



The SPP Board of Directors and Members Committee gather in Tulsa for their April meeting. | © RTO Insider

months ahead:

- FERC's reversal of a previously issued waiver request allowing SPP to invoice transmission customers for Attachment Z2 credit payment obligations from the 2008-2016 time period. The commission has ordered SPP to refund approximately \$200 million to members. (See [SPP MOPC Briefs: April 16-17, 2019](#).)
- A Federal Power Act Section 206 complaint filed with FERC by the city of Springfield, Mo., over SPP's highway/byway cost allocations ([EL19-62](#)).
- FERC's recent elimination of exit fees for non-transmission-owning or non-load-serving entity members. (See [FERC Tells SPP to](#)

End Exit Fee for Non-TOs.)

The board and members took up the Z2 and exit fee discussions during its executive session.

Brown said the Corporate Governance Committee will take up the exit fee issue "in greater detail" in the weeks to come. FERC on Wednesday granted SPP's request to extend the compliance deadline from June 17 to Aug. 1 ([EL19-11](#)).

General Counsel Paul Suskie told the Regional State Committee on April 29 that two members have filed Section 206 complaints with FERC alleging SPP incorrectly calculated Z2 payments. Suskie said four additional TOs have told him they plan to file complaints because the RTO is not issuing refunds.

SPP MMU: Competitive Markets, Prices Up \$2/MWh

A draft version of the Market Monitoring Unit's 2018 State of the Market report finds the RTO's markets are competitive, with average energy prices of \$28/MWh, about \$2/MWh higher than 2017 because of increased loads, transmission expansion, lower wind capacity factors and increased generator outages that offset lower gas prices and a "large and increasing" reserve margin.

The MMU has relied on a peak available capacity metric instead of a reserve margin in its last two reports. The metric uses a percentage of each resource's average maximum capacity during July and August, divided by the resource's nameplate capacity. For 2018, the peak available capacity percentage was



SPP CEO Nick Brown and Board Chair Larry Altenbaumer confer before April's Board of Directors meeting. | © RTO Insider



35%, up from 33% in 2017, nearly three times higher than SPP's minimum required planning reserve margin of 12%.

MMU Executive Director Keith Collins has compared SPP to a "wind store," it having added almost 7 GW of wind capacity over the past three years and expecting another 6 GW to come online over the next few years. SPP has more than 20 GW of available wind capacity.

Wind additions continue to outpace generator retirements, Collins said. He said members retired 1.9 GW of coal and gas capacity in 2018.

Collins said while the MMU is not making recommendations to address "imminent" issues, it is advising "more of a prepared approach" for future events.

"Be prepared and assess what the world will look like with changing prices, especially with transmission expansion," he said.

The MMU is recommending parameter changes (ramp rates, run time, down time, etc.) to limit market power, improving credit rules to account for known information in assessments, developing a mechanism or product to pay for capacity that covers uncertainties, and improving the ability to assess a range of potential outcomes in transmission planning.

The report will be shared with FERC by mid-May, Collins said. A conference call to further discuss the report will be held shortly before the end of May.

2018 Annual Report, 'Balance,' Available

SPP distributed copies of its 2018 annual report, "Balance," during the board meeting. The title alludes to the task of managing real-time operations, reliability, compliance, financials and developing carbon-free resources.

"We hold to a belief that reliability and economics are inseparable," Brown writes in the report. "It's our duty to ensure the reliable delivery of electricity to millions of people across our footprint, and every decision along the way has a financial impact to our members and their end-use customers."

The report is posted as a [PDF](#) and an [interactive website](#).

Directors, Members Recognize Retiring Stakeholders

Directors and members paid tribute to several retiring stakeholders who were attending their last board meeting: Mike Risan, Basin Electric Power Cooperative's senior vice president of transmission; Jerry Peace, Oklahoma Gas &

Electric's vice president of integrated planning and development; and FERC's Darrell Piatt, with the Office of Electric Reliability.

Brown said he goes back 30 years with Risan and credited him with helping drive the 2015 integration of the Integrated System.

Consent Agenda Includes GridLiance NTC

The board's consent agenda, which passed with the Members Committee's unanimous consent, approved several new stakeholder group members and handed GridLiance High Plains the assignment of a notice-to-construct for a Kansas Power Pool 69-kV rebuild project. The NTC's potential assignment was the subject of some contention during the April Markets and Operations Policy Committee meeting but remained on the consent agenda. (See "SPP Proposing to Assign Kansas NTC to GridLiance," [SPP MOPC Briefs: April 16-17, 2019](#).)

The \$3.6 million project, which would rebuild 4 miles of 69-kV lines in Winfield, Kan., is waiting on approval from the Kansas Corporation Commission (19-GLPE-338-ACQ). GridLiance and Winfield have agreed to a long-term partnership that includes investments in "reliability upgrade(s)."

GridLiance High Plains President Brett Hooton said the company is excited about the board's approval. "We look forward to working through the Kansas Corporation Commission's regulatory process," he said.

The consent agenda's approval also resulted in the withdrawal of several NTCs issued to Westar Farmers Electric Cooperative in 2008 and 2009. The proposed 69-kV upgrades are no longer needed because of subsequent 138-kV upgrades in the area.

Two other NTCs, previously awarded to

Southwestern Public Service, were withdrawn in a separate vote following an out-of-cycle reevaluation of SPS' Lamb County project. The project was identified as a regional reliability effort in the 2014 Integrated Transmission Planning near-term assessment, but SPS said it believes the project is no longer needed. Staff found no adverse effects by removing the project from the 2020 ITP, generator interconnection or transmission-service processes.

The board approved:

- Tri-State Generation and Transmission's Duane Highley to the Human Resources Committee. Highley replaces himself after formally resigning from the committee when he left Arkansas Electric Cooperative Corp. to become Tri-State's CEO.
 - OG&E Controller Sarah Stafford's appointment to the Finance Committee, replacing the retiring Peace.
 - The Model Development Working Group's charter revision that expands voting membership from 14 members to "up to" 24, allowing NERC-registered transmission planners to join.
- The board also approved two revision requests:
- **ORWG RR349:** Requires responsible entities to use the reliability communications tool (R-comm) instead of telephones to communicate with the SPP balancing authority.
 - **TWG RR350:** Eliminates language in the criteria that is already covered by NERC standards or other SPP standalone documents, minimizing inconsistencies or conflict with current and future NERC standards and revisions. ■

— Tom Kleckner



MMU Executive Director Keith Collins briefs stakeholders on the 2018 State of the Market report. | © RTO Insider



SPP Regional State Committee Briefs

RSC Endorses DER Policy White Paper

TULSA, Okla. — SPP's Regional State Committee last week endorsed a policy white paper intended to ensure all net peak demand is carrying the appropriate capacity, as mandated by the RTO's resource adequacy requirements.

The Distributed Energy Resource Policy addresses whether each DER is treated strictly as a modifier for a load-responsible entity's (LRE) load or as capacity. Resources identified under the policy do not meet the requirements for firm capacity or deliverable capacity, as defined by SPP's Tariff.

The paper defines DERs as either "controllable and dispatchable demand responses" (CDDRs) or "controllable and dispatchable" resources (CDRs).

CDDR is a specific program used to reduce LREs' forecasted peak demand. The resources are not considered as capacity resources, even if they're registered in the Integrated Marketplace, and can be controlled or dispatched by SPP or the LRE.

CDRs are defined as LRE-controlled or -dispatched resources not registered in the

market or not a designated resource. However, they must be able to attest to having firm delivery to load. CDRs cannot be used as a load modifier unless they are non-controllable or non-dispatchable.

The white paper was unanimously endorsed in December by the Cost Allocation Working Group, which reports to the RSC. It has also been endorsed by the Supply Adequacy Working Group, which drafted the paper, and the Markets and Operations Policy Committee. (See "DER White Paper Gains Endorsement," *SPP MOPC Briefs: April 16-17, 2019*.)

The white paper will be turned into a business practice and eventually become an attachment to the Tariff's Attachment AA.

Market Monitors Develop Seams Issues

Adam McKinnie, an economist with the Missouri Public Service Commission, told stakeholders that a joint committee of SPP and MISO regulators is reviewing *seams topics* for potential development, as suggested by the RTOs' market monitors.

McKinnie said the *SPP RSC-OMS Seams Liaison Committee* will have further discussion with



Missouri PSC's Adam McKinnie brings members up to date on SPP-MISO seams issues. | © RTO Insider

the monitors to develop a scope for the work, which the committee expects to finalize in May.

The topics include how transmission planning assumptions limit the ability to identify joint projects; whether rules unique to each market affect seams; whether transaction scheduling/interface pricing can be improved to ensure beneficial market outcomes; and the effectiveness of the RTOs' market-to-market process.

The committee will likely meet in person during the National Association of Regulatory Utility Commissioners' July meeting in Indianapolis. ■

— Tom Kleckner

If You're not at the Table, You May be on the Menu



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Company Briefs

Reuters: Tesla Expects Shortage of EV Battery Minerals



Tesla expects global shortages of nickel, copper and other electric vehicle battery minerals down the road because of underinvestment in the mining sector, the company's global supply manager for battery metals told an industry conference on Thursday, two sources told Reuters last week.

Sarah Maryssael, Tesla's global supply manager for battery metals, told a closed-door D.C. conference of miners, regulators and lawmakers that the automaker sees a shortage of key EV minerals coming, according to

the sources.

According to a Tesla spokesman, the comments were industry-specific and referring to the long-term supply challenges that may occur with regards to these metals.

More: [Reuters](#)

Microsoft Joins Group Seeking to End Historic Climate Change Lawsuits



Microsoft has joined a conservative-led group that demands fossil fuel companies be granted legal immunity from attempts to claw back

damages from the climate change they helped cause.

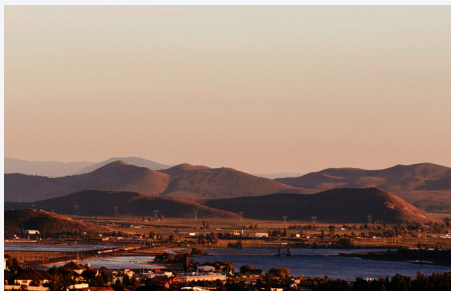
The stated goals of the Climate Leadership Council include a \$40/ton tax on carbon dioxide emissions in return for the gutting of current climate change regulations and "protecting companies from federal and state tort liability for historic emissions."

Microsoft has become the first technology company to join the CLC, which includes oil giants BP, ExxonMobil, Shell, Total and ConocoPhillips among its founding members. Handing legal immunity to these oil companies would squash a cavalcade of recent climate lawsuits launched by cities and counties across the U.S., including one by King County, Wash., where Microsoft is based.

More: [The Guardian](#)

Federal Briefs

FERC Approves Swan Lake North Storage Project



FERC last week granted a license to the developers of the \$800 million Swan Lake North project, a 393-MW pumped hydro storage facility near Klamath Falls, Ore.

The facility would be the first of its kind in decades to be licensed in the Pacific Northwest and would be the largest energy storage facility in the region.

"We are very pleased that the commission has issued a 50-year construction and operational license for the project, and we look forward to the next phase of development," said Erik Steimle, vice president of Rye Development, which is developing the project with National Grid Ventures.

More: [Oregon Public Broadcasting](#)

House Backs Paris Agreement in 1st Climate Bill in a Decade

The House of Representatives last week



passed its first climate change bill in a decade, voting 231-190 to require that the Trump administration keep the U.S. in the 2015 Paris Agreement on climate change.

The Climate Action Now Act would require **President Trump** to develop a plan for the U.S. to meet the goals it committed to in the agreement to reduce its greenhouse gas emissions and block federal funds from being used to advance the formal withdrawal from the pact, which Trump announced in 2017.

The bill passed mostly along party lines, with three Republicans joining all Democrats in the House to approve the bill. Senate Majority Leader Mitch McConnell (R-Ky.) said his chamber would not take up the legislation, dismissing the bill as "political theater" by Democrats.

More: [Reuters](#)

Southern Co. Faces DOJ Investigation over Kemper Plant

Southern Co. last week disclosed it is under investigation by the Department of Justice over the Kemper County plant owned by the company's Mississippi Power subsidiary.

Southern reported in a quarterly filing with



the Securities and Exchange Commission that it could not determine the outcome of the investigation but that it ultimately might prove significant enough to materially affect its financial disclosures to investors.

The company envisioned Kemper as a national showcase for how to turn coal into gas, ultimately generating power while also capturing carbon believed to affect climate change. But costs quickly soared, Southern repeatedly revised its projections and the plant took far longer to build than predicted. Kemper's pricetag eventually hit \$7.5 billion.

More: [Atlanta Journal-Constitution](#)

State Briefs

CALIFORNIA

Garcetti Unveils Green New Deal for LA



Los Angeles Mayor Eric Garcetti last week released his annual sustainability plan for the city, this year titled “Green New Deal,” which calls for accelerated renewable resource use for electricity and increased energy efficiency for buildings.

The city would make every skyscraper and house “emissions-free” by 2050. The plan also calls for 55% renewable energy use by 2025; 80% by 2036; and 100% by 2045.

Along with the increased renewable targets, the plan increases targets for zero-emission vehicles in the city to 25% by 2025; 80% by 2035; and 100% by 2050.

Garcetti framed L.A.’s ability to achieve the sweeping goals as standing in contrast with D.C.’s difficulties moving forward on a broad climate plan. “Who cares about potholes if Venice is under water?” he said. “Politicians don’t need to look across the aisle to find the answers — they need to look across the country.”

More: [The New York Times](#)

MAINE

Mills’ Bill Would Create Climate Council, Set 100% by 2050 RPS



Gov. **Janet Mills** last week submitted a bill to the legislature that would establish a Climate Council to guide the state in reaching consumption goals of 80% renewable electricity by 2030 and 100% by 2050.

The 27-member council would have the authority to direct investor-owned utilities to run competitive procurement processes; enter into long-term contracts for capacity resources, energy resources and renewable energy credits; and participate in regional programs. The act would also set a goal of reducing greenhouse gas emissions by 45% in 2030 and 80% by 2050.

“In the not-too-distant future, my grand-

children and yours could reach my age and live in a Maine that we would not recognize,” Mills said. “So we must act.”

More: [pv magazine](#); [Bangor Daily News](#)

NEW MEXICO

PNM to Acquire Western Spirit Transmission Line



Public Service Company of New Mexico plans to acquire the 165-mile Western Spirit transmission project for \$285 million from the state’s Renewable Energy Transmission Authority (RETA).

The project, which has been under development since 2010, will carry 800 MW of electricity from wind farms that Pattern Development is building near Corona. Pattern will pay PNM for using the line through incremental rates that must be approved by FERC and said none of the costs will affect state ratepayers.

Once built, the Western Spirit line will be RETA’s first completed transmission project.

More: [Albuquerque Journal](#)

NORTH CAROLINA

Duke Energy Multiyear Rate Bill Clears Senate

A bill backed by Duke Energy that would change the way the Utilities Commission sets electricity rates cleared the Senate last week on a bipartisan 27-21 vote.

Senate Bill 559 heads now to the House of Representatives. It would allow the commission, which reviews the company’s requested rate increases, to approve rate plans up to five years ahead of time instead of going through the lengthy annual reviews used now.

Dozens of companies, including some of the state’s largest employers and energy users, oppose the measure, fearing rate hikes. Environmental groups also are against the bill, as are consumer advocates who fear less opportunity for public input if multiyear plans are approved.

More: [WRAL](#)

OHIO

Lawmakers Revise Plan to Rescue State’s Nuclear Plants

Lawmakers have rolled out a revised proposal to financially rescue the state’s two nuclear power plants following complaints from utilities and environmental groups about the original plan.

The revised plan announced last week calls for phasing in the proposed surcharges for every electric bill in the state — residential customers would pay 50 cents/month in the 2020 and then see that increase the following year to \$2.50. Businesses and industrial customers would pay more — anywhere from an extra \$20 to \$2,500/month after the first year.

Beginning in 2021, the surcharges would generate about \$300 million each year, with about half of that going to the two nuclear plants owned by FirstEnergy Solutions.

More: [The Associated Press](#)

VIRGINIA

Northam Approves Budget Barring Participation in RGGI

RGGI Inc. Gov. Ralph Northam last week signed a budget barring the state from participating in the Regional Greenhouse Gas Initiative.

The move is a stunning reversal for Northam, a Democrat who has made RGGI membership the signature environmental issue of his tenure. The governor campaigned on the issue, featured it in his inaugural speech to the General Assembly and vetoed two bills that would have prohibited the state from joining the program.

Environmentalists had pushed Northam to use his line item veto to strike the RGGI language without rejecting the entire budget. Ofirah Yheskel, a spokeswoman for the governor, said the language in this year’s budget does not restrict Northam when he proposes a new budget to the legislature in 2020. “At this time, we do not see the need for costly, drawn-out litigation,” Yheskel said. “The speedier remedy for these out-of-touch provisions is the election of Democratic majorities in November.”

More: [E&E News](#)

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