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CONTACT:
Derek Wingfield
Supervisor, Corporate Communications, Southwest Power Pool
dwingfield@spp.org
501-614-3394

Report from North America's electricity system operators examines impact of emerging technologies

WASHINGTON, D.C. -- A report from an affiliation of independent electric grid operators concludes that the future of the North American power grid depends on effectively adding renewables to the grid, the accuracy and availability of data from "behind-the-meter" resources and coordinating these distributed energy resources at the grid operator level to preserve reliability.

The report, "Emerging Technologies: How ISOs and RTOs can create a more nimble, robust electricity system," was published today by an affiliation of nine non-profit Independent System Operators (ISO) and Regional Transmission Organizations (RTO) known collectively as the ISO/RTO Council (IRC). IRC members serve two-thirds of electricity consumers in the United States and more than half in Canada.

The IRC report posits that a reliable and economically efficient power grid depends on cohesive, innovative integration of renewables; greater situational awareness among grid operators, enabled by access to dependable data; and operators' ability to control an electricity system that is becoming increasingly decentralized through the proliferation of distributed energy resources (DER).

The report is the result of more than a year's worth of research and collaboration by representatives of North America's ISOs/RTOs. It is notable that its findings and implications represent consensus among all nine organizations.

"It can't be overstated how remarkable it is that so diverse a group of organizations – serving in vastly different geographic regions and operating in varied regulatory and operational circumstances – overlap so much in their thinking on the role of emerging technologies in reliably and economically operating the North American bulk electricity system," said Nick Brown, current chair of the IRC and president and chief executive officer of one of its member organizations, Southwest Power Pool. "Any time the IRC speaks with strong consensus on a matter like it has done here, I hope our industry takes notice."

The IRC's Operations Committee formed a task force in summer 2015 to examine the deployment of particular emerging technologies across the regions served by IRC members. The Emerging Technologies Task Force (ETTF) specifically sought to identify where technological deployment intersects with operational and policy considerations.

"Each of the IRC member organizations is unique," said Edward Arlitt of Ontario's IESO, who served as chair of the ETTF. "One ISO/RTO may have greater solar capacity in their region, another may be farther along in their handling of DERs, and all of us have regulatory and operational constraints unique to the provinces, states and regions in which we serve. No matter our specific circumstances, though, we all have to keep the lights on and can agree on issues of common importance to that goal."

The IRC defines in its report a number of positions regarding policies, strategic approaches, worthy goals and critical success factors its members feel will either enable or hinder them in the near future. While it is agnostic to specific technologies that may be applied to the challenge of integrated renewable power sources, for example, the IRC recommends approaches that avoid too-early technological "lock-in" and equip grid operators to remain nimble in their assessment of new technologies.

The full report and supplemental materials are available at www.iso-rto.org/Reports/default.

About the IRC

The IRC comprises nine ISOs and RTOs in North America and serves two-thirds of electricity consumers in the United States and more than half in Canada. By sharing innovative ideas and real-world best practices, IRC members work together to build a smarter and more efficient electric grid that's well prepared to serve the North American power market and its consumers, today and tomorrow.

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