press release

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2013 Regional System Plan Details Power Grid Progress and Initiatives

Holyoke, MA—November 8, 2013—ISO New England Inc., the operator of the regional power system and wholesale electricity markets, today released the *2013 Regional System Plan* (RSP13), a comprehensive report that outlines transmission upgrades and market responses, such as generation or demand response, that can address identified power grid reliability needs. The annual plan was approved by the ISO New England board of directors yesterday.

The RSP is the culmination of a year-long process with industry representatives and other stakeholders to analyze power system needs and solutions over a 10-year planning horizon. RSP13 also discusses areas of concern that the ISO and regional stakeholders have identified through the Strategic Planning Initiative and reviews the possible effects of state and federal policies on the New England grid.

"New England's regional planning process has resulted in extensive transmission upgrades needed to ensure grid reliability. These improvements allow power to flow more easily across the system, enable the construction and interconnection of new generators, and foster competitive wholesale electricity markets," said Gordon van Welie, president and CEO of ISO New England Inc. "At the same time, many factors are converging that will change the way the grid is operated and planned for in the future—and the RSP will continue to serve as a valuable reference document for all stakeholders to use as we move forward to solve these challenges."

Progress Report

Transmission—From 2002 through June 2013, 475 transmission projects to address reliability needs were put into service in all six New England states. These projects represent a $5.5 billion investment in new infrastructure.

System resources—Since 1997, nearly 14,900 megawatts (MW) of new generation have been constructed in New England, while approximately 3,360 MW of less efficient, primarily older resources, have retired. Currently, about 1,850 MW of demand resources (both demand-response and energy-efficiency measures) are part of New England's resource mix.

Outlook

Transmission and power system planning—Additional transmission upgrades to meet reliability requirements are under construction, have been approved, or are being designed. Some of the larger projects underway include the New England East-West Solution, which comprises major transmission upgrades in Massachusetts, Connecticut, and Rhode Island; the Maine Power Reliability Program; and

transmission system upgrades in southeastern Massachusetts and the Greater Boston area. Approximately $5.7 billion in transmission investment for reliability purposes is planned for the next five years.

The Federal Energy Regulatory Commission's (FERC) Order 1000 is requiring changes to the transmission planning processes in New England. ISO New England has filed an interregional planning proposal that builds on existing processes with neighboring power systems. Regarding the regional planning requirements of Order 1000, the ISO has filed for rehearing on several aspects of the order. While that request is pending, the ISO will continue working with stakeholders to develop a plan for implementing the order's regional requirements. The ISO is scheduled to file that plan with FERC by November 15.

Capacity—The seventh Forward Capacity Market auction (FCA #7) procured adequate resources to meet demand through 2016/2017.

Long-term load forecast—Energy consumption, unadjusted for energy-efficiency (EE) programs, is projected to grow an average of 1.1% annually through 2022, while summer peak demand is expected to grow by 1.4% per year. Because of the increased investment in EE programs sponsored by the New England states, ISO New England developed the first multistate EE forecast methodology. When the energy-saving effects of EE are included, the forecast shows essentially no long-run growth in electric energy use and 0.9% annual growth in annual summer peak demand.

Planning for the Future Grid

Strategic Planning Initiative—This initiative, launched in 2010, identified risks that could compromise the efficiency and reliability of the power grid. The predominant reliability challenges include the region's reliance on natural gas for power generation, the potential retirements of older fossil-fuel-fired generation, and the interconnection of increasing levels of renewable resources. Changes to operating procedures and market rules are underway to address these challenges and include the following measures:

- **Day-Ahead Energy Market time shift** (implemented): More closely aligns the timelines of the Day-Ahead Energy Market and natural gas trading day, giving generators more time to make fuel and transportation arrangements and giving ISO system operators more time to commit long-lead-time generators when needed
- **Tightening the shortage-event trigger** (implemented): The definition of a "shortage event" was modified to more accurately reflect stressed system conditions.
- **Winter reliability program** (approved by FERC; implementation December 1, 2013): An interim, stopgap solution to help ensure power system reliability in the event of colder-than-normal weather during the 2013/2014 winter
- **Energy market supply offer flexibility** (approved by FERC; implementation December 2014): Will allow generators to change their power supply offers during the operating day to reflect changes in actual fuel prices, helping generators better adjust to short-term fuel arrangements or high, real-time fuel prices
- **FCM Performance Initiatives** (under stakeholder discussion; FERC filing expected in late 2013): Proposal for a more robust incentive structure that would reward resources that overperform during times of system stress by transferring payments from resources that underperform during these periods
- **Operating Reserves** (operational change implemented): The ISO increased the 10-minute operating-reserve requirement by 25% to address its concern about the performance of resources and ensure the region has adequate reserves available to recover from unplanned outages

Additional Highlights

New England's fuel mix—In 2012, 52% of the electricity generated in the region was produced by natural-gas-fired power plants, while oil units produced less than 1%, and coal plants generated about 3%. Nuclear produced approximately 31%; hydro and pumped storage produced 7%; and renewable energy resources produced 7% of the electricity generated in the region.

Ongoing wind integration efforts—As the amount of wind power in New England continues to grow, the ISO is on track to implement a wind power forecast for use in daily system operations in late 2013. Progress continues on other recommendations from the New England Wind Integration Study, including modifying operating procedures and data requirements for wind resources and, over the longer term, integrating wind resources into ISO scheduling and dispatch services. The ISO is also considering changes to its generator interconnection study process, including analyzing a wider range of operating conditions than are currently required, as well as identifying elective upgrades to the transmission system in the remote areas where most wind farms are built.

Growth in solar power and other distributed generation—Distributed generation (DG) resources—primarily solar photovoltaic (PV) facilities, but also cogeneration and small-scale biomass and wind turbines—are rapidly expanding in New England. State policies are encouraging the development of these resources, most of which are connected to the distribution system and therefore are not visible to ISO system operators. It is anticipated that more than 2,000 MW of DG, mostly PV resources, will be installed regionwide by the end of 2021, up from about 250 MW of PV at the end of 2012. To address the potential effects of high levels of DG on grid reliability, the ISO recently convened a Distributed Generation Forecast Working Group. This group will gather information about DG resources in New England and eventually develop a forecast of future DG growth to be incorporated into the long-term planning process.

Smart grid advancement—The New England region is committed to advancing technologies that improve the reliable and economic performance of the system. For example, in June, ISO New England, in partnership with several New England transmission owners, completed installation of 40 phasor measurement units (PMUs, or synchrophasors) on the high-voltage transmission system throughout New England. These synchrophasors are now streaming data to the ISO and transmission owners, which are using the data to analyze system disturbances and to develop tools for system operators. The project was funded by a 2009 grant from the US Department of Energy.

The Role of Planning in New England

The annual *Regional System Plan* is developed to meet requirements established by the Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, and the Northeast Power Coordinating Council. Each RSP is a snapshot of the power system and relevant studies and forecasts at a point in time, and the results are revisited as needed to incorporate the latest available information. The RSP is produced in accordance with the requirements in Attachment K of the ISO's *Open Access Transmission Tariff* (OATT).

The *2013 Regional System Plan* is available on ISO New England's website.

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