OKLAHOMA PUBLIC POWER

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# Capacity Markets: Time for a Change

by Robert Varela
Editor, Public Power Weekly

Five years after PJM launched its “Reliability Pricing Model” (RPM) capacity market construct, the controversy over it has, if anything, intensified, as illustrated by the latest RPM auction.

While PJM touted the auction for procuring a record 4,900 MW of new generation for delivery year 2015-16, APPA Electric Market Reform Initiative Manager Elise Caplan pointed out that plants supported by state governments accounted for roughly two-thirds of all new generation cleared in the auction.

The support provided by the states should be seen as risk-mitigation arrangements, said economist James Wilson of Wilson Energy Economics. RPM proponents say the state deals give owners of those plants an incentive to bid low into the RPM auctions, but this incentive “has nothing to do with subsidies,” Wilson said. Any party that has decided to build a new plant, based on their long-term assessment of the market, wants to bid as low as practicable to obtain a capacity commitment, he said.

PJM’s minimum offer price rule ignores the fact that, in a competitive market, each developer has its own view of the market and bids accordingly, he said. In taking an accounting approach, the minimum offer rule "has moved competition out of the market and into [PJM market monitor Joe Bowring’s] office, Wilson told Public Power Weekly. The rule "now doesn’t have anything to do with buyer market power," but instead is focused on administrative determinations of whether capacity is or is not “economic” according to a flawed, short-term concept, he said.

The clearing prices in the 2015-16 auction demonstrate other problems with the RPM construct. The clearing price for the RTO as a whole was $136 per MW-day, but two zones "separated" at much higher prices. The clearing price for the ATSI zone (largely FirstEnergy’s territory in northern Ohio) hit $357/MW-day, while the MAAC zone (the mid-Atlantic) cleared at $167 per MW-day.

RPM proponents say the auctions send a price signal, but the clearing prices are "so volatile and so much a function of administrative parameters that they are meaningless" as a price signal for building a new power plant, Wilson said.

The high price for the ATSI zone was expected, given FirstEnergy’s plan to retire a large amount of coal-fired generation in response to Environmental Protection Agency regulations—which raises the question of why ratepayers should be saddled with high prices to send an unnecessary signal, Wilson said. The announcement of retirements just months before the auction did not allow time for market participants to offer replacement generation or time for PJM to identify transmission upgrades, he said. Thus, the auctions reflected the retirements, but not any market reaction or the full impact of the planned transmission upgrades.

In future auctions, ATSI zone prices are likely to be much lower, reflecting the new resources and transmission upgrades added in response to the retirements, he said. In that case, the $357/MW-day "price signal" will have been misleading and pointless, he said.

When PJM defines a new zone such as ATSI, it gives sellers with large portfolios in the zone an incentive and ability to raise RPM prices, much more so than in large, competitive zones, Wilson said. When PJM in February released its planning parameters for the auction (with ATSI as a separate zone with limited import

*(see* CAPACITY, *page 11)*

*In This Issue…*

# Shale Gas Punishes Merchant Power Producers in Bond Market, S&P Says

Once the darling of the capital markets, merchant power "has fallen victim to one of the most surprising developments in the history of U.S. energy production: natural gas that has become ultra-low-priced and ultra-abundant," according to a new Standard & Poor's report. The report, titled "Record Low Gas Prices Are Punishing U.S. Merchant Power Producers In The Bond Market," says that as a result, merchant power producers are now paying some of the highest credit spreads among U.S. corporate bond issuers.

The boom in shale gas has driven down natural gas prices and the cost of gas-fired electricity, the report noted. That has lowered the marginal price of electricity, which means merchant power plants, particularly those that run on coal, are generating less cash as their margins are being squeezed. "Credit spreads have moved into the distressed space, and bond yields now exceed 10% for speculative-grade borrowers," S&P said. Standard & Poor's said it does not expect this situation to change soon, as reflected in its ratings on merchant power producers, which are at the bottom of the rating scale. Because many of these non-utility power generators have negative outlooks, "their ratings could fall further," the report said.



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HOMETOWN CONNECTIONS

## Every Meter, Every Day

The time had come. Tennessee's Columbia Power & Water System (CPWS) decided in 2009 to move beyond the manual reading of 47,000 electric and water meters. Contract meter readers often could not access a customer's private property, leaving too many meters unread each month. Recording meter data by hand inevitably led to human errors. Customer service representatives could access at most one recorded meter read per account per month, leaving them with very little usage data when customers called to ask questions about their statements. To improve customer service and utility operations, CPWS installed intelligent meters from Elster at every home and business, to work with Elster's EnergyAxis® advanced metering infrastructure system.

In alliance with Hometown Connections, Elster provides AMI and integrated metering and utilization solutions to public power electric, gas and water utilities. EnergyAxis from Elster is a scalable, two-way, self-healing meter communications system built on a wireless 900-MHz mesh network technology. It supports metering for multiple utilities, in-home energy management tools, and distribution grid monitoring and control devices.

Working with a consultant, CPWS decided the Elster solution made the most financial sense for their utility while covering the functionality they needed. "Although we were open about the metering technology and communications choices, we were very clear about what we wanted our new metering system to do," said Charles Hunt, Information Technology Manager. "We want to read every meter, every day, automatically. We want to query a meter on demand, to check its status if a problem is reported. We want remote connects and disconnects. We want interval and historical data. We want the ability to analyze customer billing and operational performance. And we want a system we can grow over time. Elster meets all of these requirements, and more."

*This article is from an article appearing in the June 2012 issue of Public Power magazine.*

# APPA Washington Report

# Resolutions Meant to be Kept

by Robert Varela
Editor, Public Power Weekly

If you want to know what APPA staff will be spending most of their time on in the coming year, look no further than the policy resolutions approved by association members at the APPA's 2012 National Conference in Seattle.

Four new resolutions approved at the conference address electric and gas market integration, greenhouse gas rules, a Western energy imbalance market and proposed changes to the federal power marketing administrations. Association members also adopted nine resolutions previously approved by APPA's Legislative and Resolutions Committee in March.

The resolution on electric-gas market integration calls for the Federal Energy Regulatory Commission to take a number of steps to facilitate coordination of electric and gas markets, including hosting technical conferences, studying the economic and reliability impacts of retirements of coal-fired plants and facilitating discussions with state commissions and stakeholders on natural gas curtailment policies. FERC should view gas-electric coordination in areas with regional transmission organizations differently from regions with bilateral electricity markets, APPA said. The resolution also calls on Congress to examine the issues and monitor FERC's activities in this area.

In a resolution opposing an energy imbalance market in the West, APPA called for further study of such a market and its alternatives. The study should include an analysis of statutory and contractual provisions that impact formation of such a market, and separate benefits that might accrue from those that are realized from existing efforts to integrate renewable resources. The association also urged the Energy Department, Western Electricity Coordinating Council, governors, state commissioners and other policymakers to consider ongoing efforts that meet the needs of variable resource integration at a reasonable cost and that do not create undue regulatory and technical burdens.

The changes to the power marketing administrations proposed by Energy Secretary Steven Chu in his March 16 memorandum "are either unnecessary or premature," an APPA resolution on the issue said. The proposals "threaten to impose drastic economic burdens on federal hydropower customers." The resolution urges the administration to postpone implementation of the memo and seek input from customers and members of Congress.

The resolution on greenhouse gas emissions strongly urges the Environmental Protection Agency to repropose its New Source Performance Standards for greenhouse gas emissions from new fossil fuel-fired power plants "in a manner that ensures any fuel type can be used for electric generation." The agency should propose individual standards for fuel types that "are reasonable, cost-effective and, most importantly, achievable," the association said. APPA called on EPA to issue standards for coal-fired plants that are efficiency-based, "as there is no technology commercially available and deployed to reduce $CO_2$ emissions."

The nine resolutions previously approved by the L&R Committee are as follows:

Resolution 12-01: In support of the preservation of tax-exempt financing.

Resolution 12-02: Calling for FERC to revise its policy on transmission rate incentives.

Resolution 12-03: Urging Congress to apply the Small Business Regulatory Enforcement Fairness Act of 1996 to all federal agencies.

Resolution 12-04: In support of more time to comply with EPA's Mercury and Air Toxics (MATS) regulation.

Resolution 12-05: In support of flexibility in EPA's regulatory requirements to ensure electric reliability.

# Stillwater Plant Acquired

Stillwater had good news in July when ASCO Industries announced it would acquire the vacant Mercury Marine plant and invest $100 million for a new facility to fabricate aerospace components for the military. Some 600 jobs are expected by 2015. The local vo-tech will be providing career training for plant employees whose average pay will exceed $40,000 annually according to the company. State incentives could top $39 million in jobs credits.

In other statewide news, OG&E will get only $4.3 million of a requested $73 million rate increase request from the Oklahoma Corporation Commission. The company wanted an 11% rate of return on equity and had to settle for 10.2% which reflects the low cost of capital these days. In high interest rate periods OG&E had received as much as 15% rate of return on equity. All of the increased revenue will come from higher fees for municipal and security lighting.

Former Edmond mayor Patrice Douglas is set to become chair of the Oklahoma Corporation Commission. She was appointed to the Commission last year to fill the unexpired term of Jeff Cloud.

# Coal and Gas Note

Patriot Coal Company is a spinoff from the much larger Peabody Coal. Patriot becomes one of the early casualties of the drop in natural gas prices. Patriot stock price has fallen 95% in four years as the company loses business as utilities switch to natural gas. The company sought bankruptcy protection this month. Peabody, the nation's largest mine operator, has seen its share fall from $84 to $23 as it struggles against the cost of gas. But all the new business is not doing the big gas producers much good as the price has kept their profits at smaller levels than in previous years.

Companies that are doing well due to the low cost of gas are the fertilizer manufacturers. Natural gas is a key ingredient for nitrate fertilizers and makers such as Terra Nitrogen south of Claremore are producing record profits from fertilizer sales.

## EPA *(continued from page 1)*

Resolution 12-06: In support of the recommendations of the Blue Ribbon Commission on America's Nuclear Future on better managing nuclear waste.

Resolution 12-07: EPA should consider feasibility, cost, and other factors when revising effluent limitation guidelines.

Resolution 12-08: In support of expanding America's hydro power resources.

Resolution 12-09: In support of the preference principle for federal power.

All of the resolutions are posted on APPA's website. http://aristotle.publicpower.org/Pages/APPA-Policy2012.aspx

While APPA staff will be working on other issues, the policy resolutions are important as the most direct expression of the views of a diverse membership on complex issues. The resolutions are not window dressing, but working documents that staff will consult and follow.

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# Making Demand Reduction a Major Part of Diversification Plan

by Tony Di Giosa
Public Power Magazine

With more than 700,000 electric and 300,000 gas customers, CPS Energy in San Antonio, Texas, is among the largest municipal utilities in the United States. While CPS customers enjoy some of the lowest utility rates in the country, the City of San Antonio and CPS Energy have set aggressive goals for energy efficiency and diversification of their generation portfolio.

CPS Energy's Save for Tomorrow Energy Plan (STEP), as part of San Antonio's Vision 2020 project, sets goals for reducing 250 megawatts (MW) of peak demand and the city's overall energy consumption by more than 770 MW by 2020.

Everything is bigger in Texas, and anyone who has spent a summer in the Lone Star state knows this is particularly true when it comes to the temperature.

To reduce peak load, overcome the intermittent nature of renewable sources, and address conservation goals, CPS Energy engaged Consert Inc. to provide the Consert Virtual Peak Plant™ (VPP) solution to 140,000 residential and light commercial facilities (up to 50 Amps) to achieve a savings of 250 MW.

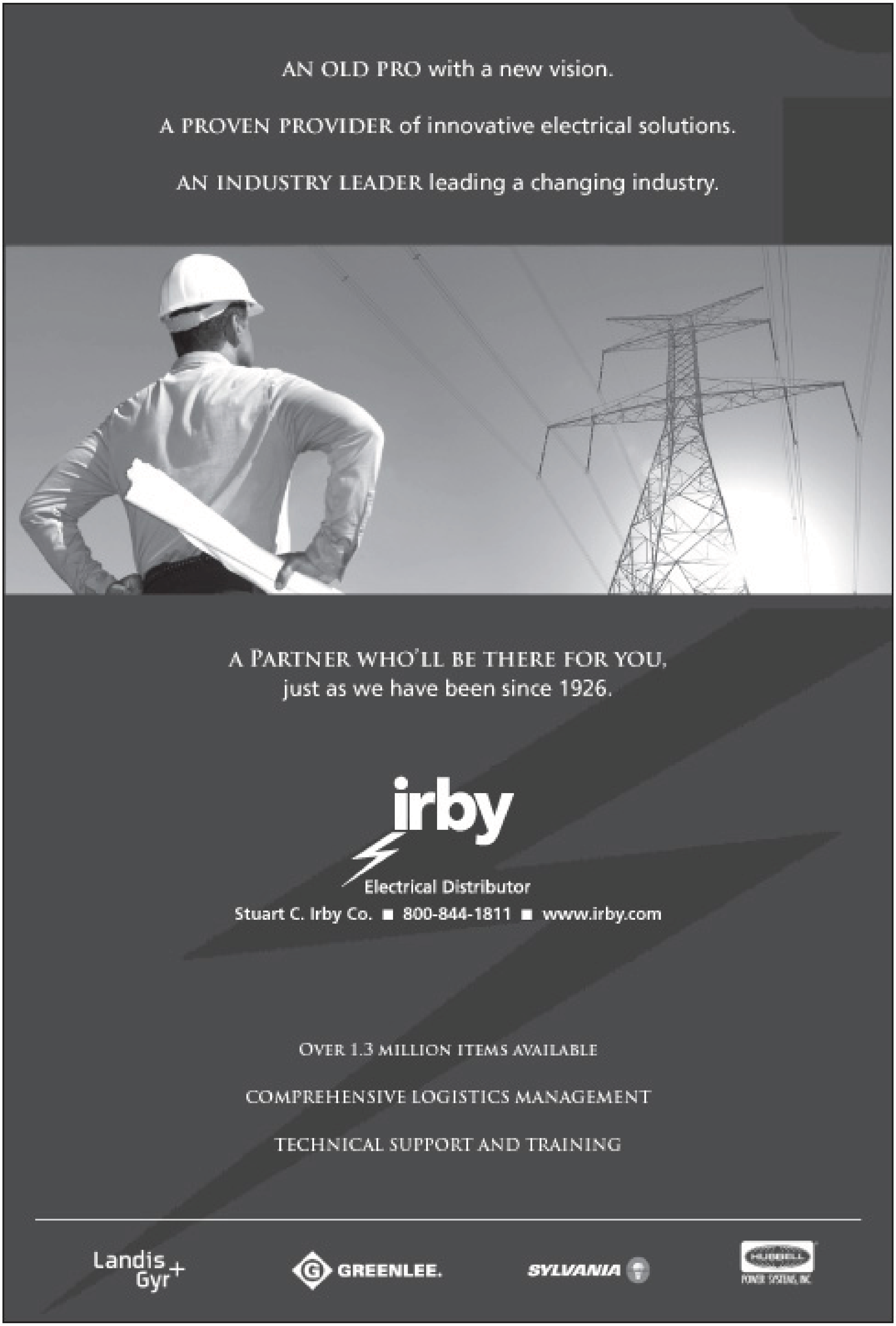
"CPS Energy has long been known for using diverse resources to generate electricity," says Doyle Beneby, CEO of CPS Energy, "and that's one way we've kept our customers' bills among the lowest of major cities in the U.S. Now, by partnering with Consert, we're adding a Virtual Peak Plant to our resources—helping our customers control how energy is used in their homes and reducing their bills. After all, what's cheaper or cleaner than demand reduction as a generation resource?"

The Consert Virtual Peak Plant provides a real-time, intelligent loadmanagement system that creates measurable and verifiable capacity, dispatchable energy, and cost savings for utilities.

The benefits to the residential customer include a home area network that graphically presents real-time information about energy consumption through a web portal and allows granular control over major energy-consuming appliances (HVAC, water heater and pool pump). Management of these appliances typically results in a 15 to 20 percent savings on their energy use without any loss of comfort.

The utility benefits by having access to high electrical use appliances in order to initiate conservation or curtailment events to shed load. Multiplied by hundreds or thousands of customers, the result is actionable load resources for a utility such as CPS Energy. Installed capital expenditure on a per kilowatt basis is very competitive with traditional supply side options.

CPS Energy began implementation of Consert's VPP in 2011 and plans to complete 24,000 installations before the end of 2012, followed by a ramp-up to up to 140,000 installations. Once all installations are complete, CPS Energy will have approximately 250 MW of actionable load at its disposal during peak seasons as part of a diversified portfolio. Even in Texas, that's a big deal.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# Price Stability in Wholesale Power

By Shane Woolbright
MESO General Manager

Depending upon your point of view, energy prices have gone through the roof or they have been amazingly stable. I'm going to use 1984-1985 as a starting framework for this article because most of the rules under which we operate were in place at that time. We were nearing the conversion of the electric generation fleet in this region from natural gas to coal at that time. In the process, we were trading 30 mill per kwh gas for 10 mill per kwh coal. The high cost of new facilities was offset by lower energy costs. By and large, we've been using the fleet of power plants either completed or under construction from 1975-1985 up to now.

In the past six years, we have seen the cost of coal and the cost of coal delivery by rail rise rapidly. That cost increase has been offset to an extent by an even greater decline in the price of natural gas. In 2007 utilities in this region would burn almost no natural gas in the winter months and use coal almost exclusively if possible. This past spring, utilities were burning 65% natural gas to meet the spring loads and cutting back on coal use since coal was running 22 mills per kwh while natural gas was as low as 14 mills per kwh.

I've been tracking the costs of energy from the various suppliers to our cities for 30 years. Typical total costs for delivered energy for poor load factor rural cities were 50 mills per kwh in the 1984-1985 period. Average kwh costs for MESO cities were about 55 mills this past summer. That is remarkable stability overall.

Our ability as cities to price power so as to have a high level of revenues to fund other city departments is based to an extent on the price of power of other utilities. We have to be competitive over the long term.

In the next five or more years, we are going to see price increases. Your power bills will rise, and your operations costs will increase. That's what I see for a typical city.

Power bills will rise because I can't believe natural gas will stay as low as it is today. There may be a glut now, but it will fade. Our gas companies say they can't make money on $4.00 per mcf natural gas. That's a 60% hike in your fuel bill over today's cost of gas. And most forecasts I have seen on the rosy side use that number for 2020. I think gas could go below $2.00 per mcf this summer but not for long. Fuel costs will rise.

Coal-fired power plants will need major investments. Our coal fleet in Oklahoma was begun in 1975. Since that time studies by the American Medi-

*(continues to top of next page)*

cal Association, the American Lung Association, and many groups advocating for children's health have clamored for action to reduce pollution from coal-fired power plants. In 1990 George W. Bush signed the Clean Air Act Amendments that mandated the EPA to require control of toxic air pollutants including mercury. In 2000 EPA announced they would begin the process of setting standards for mercury. In 2011 EPA announced that it would set standards but only after a court ordered deadline was set. The truth is that EPA officials over two decades were hesitant to order such a major cost on electric consumers without a viable technology to control mercury. The rule happened only when a reasonable cost alternative, natural gas, was available. The other cost issue for power plants is EPA's Regional Haze Rule that will require reduced emissions of NOX and sulfur dioxides from power plants. The haze rule comes from efforts by groups such as the National Parks Protection Association and others to try to improve air quality in national parks. For our area, the haze in the Wichita Mountains was a key factor in EPA rulings on Oklahoma coal-fired power plants.

Existing coal plants will need investment between now and 2016 to meet the mercury standard. There is not a way around this. A new president won't change anything. The only way coal plants would avoid the required upgrades is by the Congress amending the Clean Air Act. That won't happen. Even if Republicans gain control of Congress, northern Republicans will vote to maintain EPA standards as they did most recently when our Senator Inhofe offered amendments to remove EPA rules on mercury.

We will either see existing coal plants getting major upgrades or the retirement of those coal units with replacement by more natural gas units. Either way, your demand bill will be affected.

One other area of increase will be the continuing increase in transmission costs. The Southwest Power Pool has improved the transmission in this region greatly in ten years and will continue to expand the system to meet needs for windpower and reliability. We all share transmission costs and these will rise.

In addition of the wholesale power bill, the other increased cost will be in distribution expenses. Distribution systems are aging. Replacement costs are significantly above what we once spent for materials, conductor, poles, and transformers. In order to maintain reliability, spending in these areas must increase. This is the one area which is controlled locally.

On the other hand, we may see better efficiencies in the future. Better appliances, air conditioning systems, insulation could lead to better load factors. Some think tanks believe we will have 25% of the vehicle fleet converted to electric vehicles by 2025. Those vehicles will put a strain on distribution transformers, but the added revenue should offset that cost.

Every so often, I write a column on the challenges ahead. The challenges change. But the basis for public power systems – local control, local work force, local decision making, non-profit operation – remains the same.

In my time here, our distribution systems have improved and the overall distribution system we own collectively is likely in far better shape than before. Our power supply investments are in good condition and varied in fuel resource. Our challenges are the same as for private utilities, but our ability to fund the upgrades is less costly. We are well placed for the future – even if that future is going to be a bit more costly.

## MESO Provides Loan to Geary

MESO will provide a loan of $70,000 to the City of Geary to assist in system upgrades and to extend a power line to its water treatment plant. The actions are projected to save the City over $8,000 annually. The loan is above the normal cap of $50,000. The MESO board felt this project was important and waived the cap in this circumstance. There is still $120,000 in zero interest loan funds available for energy saving projects.

# TRAINING UPDATE

## New Training Director to be Named

Jeff Riley has been the MESO Director of Training and Safety for the past five years and has done a remarkable job. Jeff will be leaving us the end of July. In his time here Jeff added to our classroom program offerings. Jeff did two-day schools in distribution basics as well as schools on transformers, grounding, rigging, digger derrick operation, bucket truck operation, and excavation. Jeff's three-day schools in climbing and rubber gloving gave apprentice lineworkers the tools they needed to advance. MESO is seeking a new training director and hopes to have him on board by October.

## National Electric Safety Code School to be Offered in August and September

The National Electric Safety Code is the bible of the electric utility industry. The NESC sets the minimum standard for all field operations. The code has been revised with many changes made. The 2012 edition of the National Electric Safety Code is the topic of a new school offered by MESO next month.

This school will be very low in cost because GRDA and OMAG have provided MESO with funds to make this school low in cost for our cities. OMAG notes that the majority of liability claims filed against cities which are paid are for incidents where there was an NESC violation. Having all distribution system components meeting the standards in the code is an important part of risk management. So we thank OMAG for their participation in helping to fund the schools.

The NESC schools will be held in both Pryor at the city offices at 6 North Adair on August 16 and at the MESO Training Center at 308 NE 27th in Oklahoma City on September 18th. Fees for the school will be only $29 for members and $110 for non-members to cover the cost of printing materials and providing lunch and refreshments. NESC schools are advertised nationally for several hundred dollars so not only is this needed training, it is a huge bargain.

*(see* TRAINING, *next page)*

## Capacity (continued from page 1)

capacity), it became clear that ATSI would clear at the maximum price of $537/MW-day unless a large amount of new resources or import capacity was added, he said.

What happened with the ATSI zone illustrates how RPM's volatile prices result from administrative determinations and the choices of incumbent market participants more than from competitive dynamics, Wilson said. Those administrative determinations, some of which involve considerable discretion, include: whether to model a zone, and its boundaries; modeling the capacity import limit for a zone; the load forecast; PJM's identification of transmission upgrades in response to retirements; and allowed minimum offer prices.

After five years, with this many problems and two states essentially in open revolt, it's time to try a different approach. One possibility is APPA's Competitive Market Plan. The Federal Energy Regulatory Commission would do well to start a serious dialogue on the Competitive Market Plan and other alternatives to capacity markets like RPM.

## Training (continued from preceding page)

Attendees must have a copy of the NESC. It is expensive with the code and handbook going for $299. They can be purchased at www.ieee.org. The books ship in two days.

David Garrison, who has been doing the NESC course work for us for ten years, will provide the instruction.

Registration and school information has been sent to all members.

## OMAG and MGSO Provide Training

MESO also provides staff services for municipal gas systems through the Municipal Gas Systems of Oklahoma organization. MGSO will be doing some superb gas operator certification training this year. This training is also being done due to financial assistance from OMAG. In reviewing gas system claims, OMAG felt that its defense against claims could be greatly helped by having recent certification in operations with that certification done by a superbly qualified training group. Shane Woolbright worked to bring the training provided by the American Public Gas Association to Oklahoma. Six different one-day schools are being done in both Pryor and Oklahoma City this fall. Gas systems have been sent notifications on the schools which will cover regulators, valves, metering, purging, corrosion, tapping, and damage prevention.

Schools will be provided by the American Public Gas Association Security and Integration Foundation.

## Capacitor Classes Heavily Attended

Eighty-eight people attended two workshops provided by MESO on Capacitor Applications this summer. Instructed by Dave Garrison, the workshops reviewed all aspects of capacitor selection, operation, and placement. Dave wrote the standard for the Rural Utility Services for capacitors and capacitor applications. Workbooks and DVDs were provided as part of the program.

Dave will be doing the upcoming workshops on the National Electric Safety Code and fall workshops on underground line design and instal-

## CALENDAR

August 10, 2012
**MESO/OMUSA Board Meetings**
MESO/OMUSA Offices, OKC

August 16, 2012
**National Electric Safety Code Update 2012**
Pryor City Hall

August 27-29, 2012
**OGA Annual Conference**
Embassy Suites, Norman

September 13, 2012
**The Supervisor Course: Personal Accountability**
Altus

September 18, 2012
**National Electric Safety Code Update 2012**
Next door to MESO/OMUSA Offices
OKC

September 18, 2012
**The Supervisor Course: Critical Thinking: Planning & Preparing to Prevent Disaster**
MESO/OMUSA Offices, OKC

September 25, 2012
**MESO/OMUSA Board Meetings**
Cox Convention Center, OKC

September 25-27, 2012
**OML/MESO Conference**
Cox Convention Center, OKC

October 11, 2012
**The Supervisor Course: Negotiating for Success**
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