

Holiday Trouble Wind-Caused **Outages Follow** Thanksgiving

t was Thanksgiving weekend a rotten time for the power to go out, even if the outages that affected up to 2,000 Co-op members began in the wee hours of Saturday morning, not on Thanksgiving itself. It was still a holiday weekend.

It was also the last weekend of deer season - a rotten time for several WEC linemen to have to leave deer camp and head in to work. But that's what they did, and they worked long hours. They began arriving between 2 a.m. and 4 a.m. Saturday morning, and by 5 a.m. virtually everyone was on the job.

"Most of the crews and the dispatchers worked until about 9:30 Saturday night, although some didn't get to leave until 11:30 and we did keep some people working through the night," said WEC **Operations Director Dan Weston** (whose home in Calais was affected by the outage). "We brought everybody back at 6 a.m. Sunday morning. We had the majority of our members back on [meaning, their power was restored] by noon, then spent the next several hours picking up the remaining outages. By 4:00 or 4:30, everyone was back on."

It would have taken longer if the

Co-op had not been able to get help from two municipal utilities - Johnson Water & Light, and Morrisville Water & Light – and from Green Mountain Power Corp., all of which contributed crews. Those companies had not been hit as hard by the windstorm – just as, a week or so later, 14,000 Vermonters lost their power, some for as long as 48 hours, in a storm that barely affected Washington Electric. In that case, the Green Mountains ran interference for us, blocking the worst effects of the storm.

But we weren't so lucky on the holiday weekend. Weston said that most people understood and expressed thanks for the crews' efforts when they called in. A handful of members, however, were frustrated over the outage and how long it took them to get through to the Co-op, which was frankly overwhelmed by calls.

In his dealings with members over the phone, Weston appreciated their expressions of thanks but he was also concerned over some of the things he heard. People, he said, need to be prepared for outages, because in rural Vermont no electric system is immune from them.



It was "Stuff A Truck" day again, on November 19, an annual drive for the Central Vermont Food Shelf coordinated by area radio stations. The Co-op participated for the fourth year in a row, through Washington Electric's Community Fund. Above, linemen unload a WEC truck filled with nonperishable food items. More on page 8.

LEDs Are Coming 'Goodbye' to the Standard Light Bulb

ight-emitting diodes are in your future. They're in your present, too – the lighting technology behind flat-screen computer monitors and TVs, the text and all the other smart-Alec stuff on your mobile phone, the destination signs on public buses, traffic lights, medical equipment monitors... the list goes on.

There are other ways that LEDs - light-emitting diodes - could be present in your life immediately, and one of them is for holiday lighting. If you haven't finished stringing your outdoor lights yet, or decorated your Christmas tree, consider buying strings of LED bulbs.

Why should you? Because they

that conventional holiday lights use, and they last many times longer. That's an important consideration for outdoor displays that are left on for long hours at a time. Such decorations wreak havoc on people's electric bills for December (or longer, because some homeowners use their holiday lighting much of the winter), so changing to LEDs would enable you to enjoy your festive lights without making you gloomy when the bill arrives.

But here's the big news: In the not-too-distant future LED technology will become standard for indoor home lighting, and "traditional" incandescent bulbs - what we've always thought of as "the light

continued on page 8 use a mere fraction of the electricity

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Washington Electric Cooperative

East Montpelier, VT 05651

Inside

Celebrating history, but looking forward. Washington Electric Co-op turned 70 in 2009, and paid tribute to its former leaders. But WEC lives in the present and future. President's Report, page 2.

A rate increase in the offing. Co-op members and WEC Manager Avram Patt "continue the conversation." Page 3.

Your household, on a fraction of the wattage. Energy usage for indoor lighting will decrease radically by the 2020s, by law. See LED chart, page 6.

WEC employees "Stuff a Truck" for members of our community. Photos on page 8.



Our buddies up north at VEC are profiled, along with New Hampshire Electric Co-op, as we continue visiting our progressive and innovative electric co-op neighborhood. Page 4.

President's Report

The Year That Was (2009), And A Preview of 2010

By Barry Bernstein

s the year comes to a close we have just experienced the beginning, possibly, of a real white Christmas, with

nearly a foot of snow at my home and more snow predicted. Fortunately this storm did not cause the significant outages that occurred during Thanksgiving weekend, when high winds resulted in nearly 25 percent of WEC's 10,500 members experiencing outages, and some folks not getting their power back for

up to 28 hours. We were able to again rely on neighboring utilities for help, and we send our thanks to Morrisville Water & Light, Johnson Water & Light, and Green Mountain Power Corp. for their assistance. More than 70,000 homes and business lost their power in New England during Thanksgiving weekend, and a snowstorm the following week caused significant outages in other



parts of the state.

I know it is frustrating for our members, when you call the Co-op during a major storm, to find our phone lines frequently busy. Unfortunately, it's

impossible to respond to 2,000 calls coming in at once, which can happen in the early hours of an outage. But it is very important that you do call, and we ask for your patience as we try to get your power restored as quickly as possible. Although we have made significant changes in our outage-response

Board's Members & Markets Committee will continue to explore ways to further improve communication during significant storms. In recent issues of Co-op Currents. General Manager Avram Patt has also noted that newer forms of electronic communication and smart meters may play an important role in the Co-op's outage-response systems in the future.

Co-op Currents



WEC is part of the

alliance working

Co-op Currents (Publication No. USPS 711 -210 and ISSN No. 0746-8784) is published monthly except February, May, August and November by Washington Electric Cooperative, Inc., Route 14, P.O. Box 8, East Montpelier, Vermont 05651. The cost of this publication is \$.44, which is included in the basic monthly charge to each member. Periodical postage rates paid at East Montpelier and at additional offices. Postmaster: Send address changes to Co-op Currents, P.O. Box 8, East Montpelier, Vermont 05651.

to advance and support the principles of cooperatives in Vermont.

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2009 In Review – Highlights

WEC turns 70

What more can you say? Seventy years of incredible community effort from Co-op members in 41 towns starting in 1939 with the struggle to bring electricity to the farms and homes of central Vermont by a small group of dedicated people, who had to withstand pressures from investor-owned utilities and were decried as "socialists" because they came together to provide a basic need that was being denied to their families. They left us a wonderful legacy, and we have attempted to thank them during the course of the year by publishing the names of all of WEC's trustees and directors in the Rear-View

Mirror section of Co-op Currents (which concludes on page 5 of this issue). In the spirit of their effort, our menu at WEC's 70th Annual Meeting in May featured home-grown food supplied from local farms and businesses.

Old friends

Director Wendell Cilley, who died in September 2008, was honored at our Annual Meeting for his dedication and commitment to WEC and our community. Wendell was also honored at the annual meeting in June of the NEAEC (Northeast Association of Electric Coops), where his family received the George Aiken Award, named in honor of the U.S. senator and Vermont governor, who supported the electric co-op movement in its infancy.

The Coop also lost former Trustee Nancy Huelsberg, who served in the 1980s during WEC's struggle over change in its direction and policies. These two leaders are remembered and missed.

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The Vermont Public Service Board requires all electric utilities to publish this Herbicide Use Notification periodically. Members of WEC are reminded, however, that it has long been the policy of this cooperative not to deploy herbicides in its right-of-way management program.

PUBLIC NOTICE

PUBLIC NOTICE

HERBICIDE USE NOTIFICATION

Vermont utilities maintain electric line rights-of-way with several methods, including the selective use of herbicides on trees and brush. They also encourage low-growing shrubs and trees which will crowd tallgrowing species and, thus, minimize the use of herbicides. The application of herbicides may start as early as April 1. Requests to utilities for notice by mail, however, must be made by February 15.

The Public Service Board requires Vermont utilities to carry out vegetation management techniques which allow maintenance of electrical systems in a cost-efficient manner.

The types of herbicide treatment used to keep utility lines clear are: stump, injection, basal, soil and foliar. These are the common methods used, although they may not all be used by the utility in your town. Landowners have the options of requesting herbicide treatment on cut stumps only, or that no herbicide be used at all. In the latter case, an administrative fee would have to be paid to the utility. Only electric utility rights-of-way which have tall-growing tree species with the potential of threatening the electric utility system are treated.

Utilities advertise by radio and newspaper prior to herbicide applications on all lines. Lines usually are treated only once in a four-to-six year period depending on the specific management cycle of the utility. Please check with your utility regarding the cycle of a particular line.

Some utilities use metal letters and numbers on distribution and transmission line poles. Others use them only on transmission lines. The letters, such as V.E.C. (Vermont Electric Co-operative), or V.E.L.C.O. (Vermont Electric Power Company), are not found on every pole. A check of several poles on a line should aid you in determining whether poles are marked and which utility is the owner.

Persons owning or occupying land within 1,000 feet of a utility right-of-way may request in writing that the utility notify them individually by mail anytime, but at least 30 days prior to treatment of the line with herbicides. The landowner or resident is responsible for contacting the utility, in writing, to request placement on the mailing list. The utility should be provided with sufficient information as to the exact location of the residence and land. It is the duty of each landowner or resident to make the utility aware of the location of any potentially affected water supply, and any environmentally sensitive areas where herbicide application ought to be avoided.

CONTACT YOUR ELECTRIC UTILITY WITH QUESTIONS OR SUBMIT THE COUPON PROVIDED

systems, our staff and the

Consumer Affairs & Public Information Dept. of Public Service 112 State St., Montpelier, VT 05620 1-800-622-4496 or 1-802-828-2811					
ERSONAL REQUEST					
Town/City of Affected Property					
Telephone Number (Home)					
(Work)					
O.K. to use Work Number: Yes No					
Best Time to Call					
Summer Residence Commercial Property					
Water Supply Land Other					
Numbers					
you qualify for personal notification. If information is paper if you need more space.					
O YOUR LOCAL UTILITY					

Continuing the Conversation

Members Mull Rates And More After WEC's Community Meetings

ashington Electric Co-op's community meetings, held at two locations each October, provide the Co-op's management and directors an opportunity to speak with members informally about everything having to do with their cooperative: its energy policies and plans, the costs of

doing business, and what the Co-op is doing to improve the poles and wires and substations in their neighborhoods.

The meetings also let the staff and directors hear what's on people's minds. They try to answer members' questions about service, rates, and policy, and listen to their ideas about WEC's and Vermont's energy future.

When 8:30 comes around and it's time to go home, the conversation ends. But the thinking goes on. It turns out the discussions stay with people; they continue to ponder what they learned, what they didn't understand, and what they wish they had thought to ask about or say.

The dinners provided this year by the Women's Group at the United Church of Cabot on Tuesday, October 20, and the Chelsea Service Guild two days later at the Chelsea United Church, were terrific, and much appreciated. But it was the information discussed at the meetings that WEC members Jules and Kathleen Chatot, of Plainfield, who attended the Cabot meeting, and Tony and Teddy Mason-Sherwood of Corinth, who traveled to Chelsea, were digesting a couple weeks later. Each couple went home with thoughts and reflections, and perhaps a little unfinished business. *Co-op Currents* covered the meetings in our October-November issue, but this month let's check in with the Chatots and the Mason-Sherwoods, and run their ideas and concerns past WEC General Manager Avram Patt.

A rate increase nearing

[the Coventry plant]. We've always been so happy about Coventry, and we were very impressed."

By contrast, a big increase in pension costs and its projected impact on the Co-op was new news, and a factor that Patt cited in predicting that WEC probably would file with the Public



WEC members (from left) Patricia and Thomas Duvall and Milton Rogers, at WEC's Community Meeting in Cabot, October 20. Participating is what it's all about for a member-owned electric cooperative.

Service Board for a rate increase sometime in 2010. Kate Chatot hadn't forgotten about that a couple of weeks later.

"I'm imagining a double-digit increase," she said, "some of it attributable to the pension situation."

No one can be happy about a rate increase, but Kate was able to see it in context.

"It's reality," she said. "Not too many entities, public or private, could maintain 10 years without [rate] increases, which is what Washington Electric has done. But the reality is that WEC is not exempt from the challenges that are out there. Avram made no excuses. [But] the more the Co-op gets the news out the better, because an increase like that will be a shock to people."

Since we're thinking of this as a "virtual" community meeting, let's get the general manager to respond:

"We've been trying to get the word out for quite some time that there would be a need for a rate increase, though it's not always easy to capture people's attention. We've brought it up in articles in Co-op Currents, and Don Douglas has reported on this in his last two annual Treasurer's Reports. As we work on the numbers, the information we are providing has been getting more specific. That's why we made this a major topic at our community meetings and in the follow-up newsletter articles. likely rate increase in 2011. But it is not the only factor, and not the biggest one. We have not had a rate increase in ten years now, and during that time most of our costs have risen, including labor, health benefits, materials, equipment, and almost everything else. Lower wholesale power costs and Renewable

> Energy Certificate revenue, both thanks to our Coventry plant, have helped counter rising costs elsewhere in our budgets, but we had always forecast that a rate increase would be needed in the foreseeable future.

"What has happened recently is that a combination of lower kilowatt-hour sales to members (decreasing our revenue) and higher-than-expected increased costs in a few specific areas such as our property taxes in Coventry, have put financial pressure on the Co-op. The pension costs are among a few factors that have changed for us recently, but overall, they are not the main reason for the rate increase we discussed at the meetings."

So the news was mixed for Kate and Jules Chatot. But the experience was positive. In fact, said Kate, "I came home with one of those meters [for measuring the voltage used by home appliances and equipment]. Bill Powell loaned me one."

Powell, WEC's products & services director, will do that if you give him half a chance. He knows that, whatever's happening financially for the Co-op, members can control their own electricity usage and lower their costs if they know where in their home their energy dollars are going. Members are welcome to call Bill and ask about borrowing the test meter that Kate and Jules Chatot took home from Cabot.

Can we use Coventry's heat?

After the Chelsea meeting on October 22, Teddy and Tony Mason-Sherwood (Teddy is the wife, Tony the husband) were turning over another set of issues in their minds. Their thoughts were stirred by a story on Vermont Public Radio about Carbon Harvest Energy, LLC, a Burlington-based company that has developed a plan to harvest methane from the now-closed municipal landfill in Brattleboro and develop an intricate system to generate electricity, capture the heat from that process, and put it to use for aquaculture and year-round vegetable production. "I don't know if [Washington Electric] had thought about anything like that, but it seems like a brilliant use," said Tony. "I've thought if there was some way to capture the heat produced by

those engines in Coventry it would be a huge boost."

Tony described a farm in the Corinth area that runs hot water lines under its greenhouse, "so that when they do their early vegetable starts the roots are supported by that heat. As a member of the Cooperative I think there ought to be a use for that heat, some way to capture it to support local agriculture in that area. It would be to everybody's benefit."

What do you think, Avram?

"The Co-op has been thinking about using the waste heat from the Coventry plant since before it was built, and it's been a personal interest of mine.

"Earlier this year, we had begun to look at our options, including seeing if the heat could be used for agricultural or commercial purposes. This fall, the owner of the landfill (NEWSVT, a subsidiary of Casella Waste Systems) approached us about developing a small facility adjacent to our plant, which would capture the waste heat and use it to generate a bit more electricity. That process uses a different technology, and the kilowatt-hours generated using the heat would be more expensive than what our own generation costs us. So it makes sense for NEWSVT to consider developing the project, rather than the Co-op. We are in discussions with NEWSVT now, and if we can reach a mutual agreement, the waste heat will be put to good use, and WEC will get some additional financial benefit as well."

Capturing and using heat from electric generation is called co-generation. There are facilities around Vermont that are either employing co-generation or exploring the idea. Dave Hallquist, CEO of Vermont Electric Co-op, mentions it in our article on VEC and the New Hampshire Electric Cooperative, on page 4.

The Mason-Sherwoods – who also attended the community meeting in Tunbridge a couple years ago – were impressed by the information Bill Powell provided about home solar-energy units by which Co-op members could generate some of their own electricity.

At the Cabot meeting Kathleen (Kate) Chatot was most impressed by two things: the degree to which WEC has been rewarded for its investment in the electric-generating station in Coventry, Vermont, which runs on landfill gas; but also what she called the "reality check" about the costs WEC will incur for a \$300,000 decline in the value of the investments in the employees' fixed-pension plan.

"We've been members since 1993," said Kate, "and I'd never been to one of these meetings before. The presentations were very good, so that a layperson like me could understand the issues – what the expenses are, what we get for the investments. We'll be getting 75 percent of our energy from

"At the meetings, and in my follow-up report in Co-op Currents, we noted an increase in the cost of our employee retirement benefits starting in 2010 as one factor contributing to the need for a "Bill encouraged people to get involved," said Tony, "but he said the recovery time on the investment is very long-term. He said anything we can do to reduce our consumption helps the Co-op."

In summary, Tony added, "The meeting was tremendously informative. It made me feel a part of things. Unlike most companies, trying to get money out of my pocket, it was refreshing to be in a room of people who were interested in, 'How do we keep going? How do our kids survive? How do we make our resources last?"

Serving more than 10,000 member/owners in central Vermont. A rural electric cooperative since 1939.

THE NEAEC CO-OPS Back From the Brink

Vermont and New Hampshire Co-ops Contemplate A New World

hen you consider what befell the two rural electric cooperatives nearest to Washington Electric Co-op – Vermont Electric Cooperative, headquartered in Johnson, Vermont, and New Hampshire Electric Cooperative across the Connecticut River – it's clear that WEC dodged a bullet when it withdrew from the Seabrook, New Hampshire, nuclearplant construction project in 1988 and ceased making payments. That decision was highly contentious within the

Co-op, and it triggered a few years of lawsuits and countersuits, but in the end Washington Electric got its money back -- \$924,208 it had paid into the nuclear project in 1986-87.

VEC and NHEC didn't fare as well. Both fell into bankruptcy in the 1990s, and their investments in Seabrook were largely to blame.

But the old saying is that what doesn't kill you

makes you stronger. It must be true, because both of those co-ops – which are affiliated with Washington Electric through the NEAEC, the Northeast Association of Electric Cooperatives became success stories. They rebounded from bankruptcy, invested heavily in improving services to their members, and like WEC are moving steadily toward greater use of local, renewable sources in their power portfolios. And although these are hard times for electric utilities - kilowatt-hour sales are down, costs of doing business have been going up – NHEC and VEC are economically stable compared to the past, and determined to stay so even as they feel the effects of the recession.

In fact, Financial Strength is number one on a list of three "strategic themes" New Hampshire Electric Co-op's board of directors adopted in setting a cour for the future. "We came out of bankruptcy in 1993," says NHEC CEO Fred Anderson. "It was a sobering experience and a motivation to improve our financial performance. We believe we'll achieve 40-percent equity within five years or SO." They aren't doing it by skimping. Service Quality is the second of NHEC's strategic themes, and the sprawling, Plymouth-based co-op, which serves Granite State members with 5,480 miles of line (compared to WEC's 1,260) in 116 towns (compared to WEC's 41) invested more than \$8 million in system maintenance and improvements in the aftermath of its bankruptcy, knowing that good service pays off.

NHEC's third strategic principle is Social and Environmental Responsibility. The co-op has taken great strides to help members conserve energy in their homes and businesses, and it provides rebates to members who invest in solar energy systems or small wind generation. Plus, New Hampshire now has its first commercial wind installation, in Lempster, and NHEC is a customer. The co-op also procures wind-generated power from Bear Ridge, Maine.

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Anderson, NHEC's CEO for 17 years, says he admires Washington Electric's progress in developing local, alternative sources of clean energy.

"We'd love to be where WEC is," he says. "But Avram [referring to Avram Patt, WEC's general manager] used to say, 'We worry less about rates than about the bills people

pay; that's more important.' We've adopted that theme. We're trying to be a solutions organization for our members, the one they turn to if they want to cut their usage by 10-to-20 percent."

As for Vermont Electric Co-op, looking at VEC today almost causes disbelief. Is that the same co-op that went into Chapter 11 bankruptcy in 1997? And in 1999 VEC nearly disappeared when a group of municipal utilities tried to purchase its mortgaged assets, a plan that was blocked by the Vermont Public Service Board.

A mere five years later it was the co-op that became the buyer. VEC purchased the poles, lines, substations, trucks, warehouses, headquarters and service centers of what was then the third-largest electric company in Vermont, Citizens Utilities. VEC's membership jumped from 17,000 to



Vermont Electric Cooperative CEO David Hallquist, in this photo captured from a DVD, explains VEC's participation in the Redona Project. Working with two partners, VEC envisions a system of energy production through gasification, with distributed generation around the co-op's northern Vermont service territory.

38,000, spread over a contiguous territory across the northern tier of the state, from border to border.

The transition made headlines, but VEC's recovery leading up to it was quiet, diligent, and based on repairing trust with its members.

"[We] worked to restore our service and reputation," then-General Manager Kelly Enright explained to *Rural Electric Magazine* in 2004. "We've done it without fanfare. We've been under the radar screen."

Today's Vermont Electric Co-op is a leader in new technologies, the first Vermont utility to deploy "smart meters." Linking these 28,900 smart meters through a smart-grid system (Advance Meter Infrastructure, or AMI) enables the co-op to gain new efficiencies, such as identifying and responding to outages more quickly.

VEC is also aggressively pursuing wind generation. Like Washington Electric Co-op, it has contracted to purchase energy from First Wind when the 40-MW Sheffield project comes on line, and VEC has partnered with Green Mountain Power on a proposed project on Lowell Mountain. (Sheffield and Lowell are both within VEC's service territory.) It has other plans for alternative generation as well.

"I believe we're on the precipice of 'the efficiency revolution,' and the epicenter of this revolution is energy," says current CEO David Hallquist. "Whenever you're in the middle of technological change, there's excitement. The losers will be the ones holding onto the old technologies."

VEC and NHEC are among the nine rural electric cooperatives teamed with Washington Electric in the NEAEC, an association that assists the member co-ops in numerous ways. Based in Maine, New Hampshire, Vermont, and New York, they are our co-op neighborhood. Like WEC, they are customer-owned, not-for-profit electric utilities, with boards of directors elected by their members. And they're an interesting group, coping, as WEC does, with today's new energy realities.

In July, *Co-op Currents* profiled the three NEAEC member co-ops in Maine (two of them serving islands!). This month we move west, visiting New Hampshire Electric Co-op and our sister co-op in Vermont, VEC.



Like WEC, New Hampshire Electric Cooperative is proud of its history. Here, community members and officials mark the setting of NHEC's first power pole, in Lempster, New Hampshire, in 1939.

Strategic planning, social responsibility

"If you go along the Connecticut River, down in the lower valleys where the roads were built, that's IOU territory," says NHEC's Fred Anderson, referring to investor-owned utilities. "Up in the hills is where we are. We do get a little way into some of the cities, and we have some towns like Moultonboro. We have almost 4,000 members in Moultonboro alone."

Moultonboro gives NHEC – New Hampshire's only electric

co-op – something rare for rural electric cooperatives: members in high-density areas that are easier and more cost-efficient to serve. And Moultonboro, a resort community on Lake Winnipesaukee, is symbolic of the changes that have taken place for NHEC over the years. NHEC's membership is enormously varied, from extremely rural areas like Colebrook near where Vermont, Quebec, and New Hampshire meet, to Raymond, a suburb of Manchester in the south. However, 30 percent of NHEC's membership is seasonal, second-home owners whose primary residence is elsewhere.

This presents a unique set of service options and challenges to the co-op. It offers "freeze alarms," which alert people in their faraway homes that the temperature in their vacation home has dropped. If repairs are needed they can contract for service and head off damage. Then there's another feature: "You can control your thermostat – turn it up when you're headed here for a visit – from a phone," says Anderson.

Much of NHEC's creative energy has been directed toward programs to reduce members' energy usage, which also reduces the co-op's powerpurchase demands.

"There's a lot of logic in doing the right thing for members, irrespective of the debate about global warming," Anderson explains. "We sat down and looked at it from a member-service perspective. There's no question in my mind that there's a limited amount of oil in the world, and that it's a difficult thing to site the new power plants we need. We get into wars over power, and have problems trying to find foreign fuels.

"So we need to cut back on usage, and generate through local means, which is renewable power. It's the right thing to do for our members, and it brings in more jobs to the community. So we now offer rebates on solar photovoltaic, hot water, and individual wind."

NHEC also provides home energy audits, followed up by financial assistance for insulation, roof repairs, and other conservation measures for qualified applicants. The bulk of the money comes through a state program. "But we've added our own program above and beyond that," Anderson says.

The CEO sees the ground gradually shifting in the national energy debate, as reflected in discussions at meetings of the National Rural Electric Cooperative Association (NRECA), many of whose members are from coal-dependent states and are reluctant to embrace change. "In the Northeast, we're somewhat on the extremes at this point, but I think it's changing," says Anderson. "I've seen people stand up and take a stand I was used to seeing Avram [from Washington Electric] take. "We're dealing with the same problems everyone else is. To serve members in the best ways, you want to look at 50 years out, not five and not two and not one. Look beyond your lifetime, or you're not going to be starting down the right road."

Co-op's CEO, has a simple answer when people ask his opinion of wind power for electricity.

"I say, 'You're talking to a utility guy. I love generation."

Does he ever. Hallquist, formerly VEC's operations manager, sees electric-generation opportunities practically everywhere he looks - not just on ridgelines in Sheffield and Lowell, but in new schemes at the edge of technological innovation. Hallquist has linked VEC with two partners to form Redona Energy ("Redona" standing for Renewable Energy Development of North America). Their plan is to develop a 1.1-megawatt gasifier. Gasification is defined as the conversion of solids into gas by means of a high-temperature reactor. The Redona gasifier would be used to gasify biomass material.

"It's the holy grail we've been looking for for years," says an enthusiastic Hallquist. "WEC has a great thing going at its plant in Coventry, and this is like a shortcut to that. Gasification produces clean gas through a chemical process rather than a biological process. We'll directly gasify the waste instead of putting it though a landfill."

Hallquist envisions locating gasification units near hospitals, manufacturing plants, and ski areas – places where the heat produced in the generation process can be captured and used for space heating. "Now you've offset the oil or propane they're burning for heat," he says.

"What's that doing for the average, rural VEC member? We think we can satisfy 20-to-25 percent of our base-load electric demand through this means of distributed generation. Plus there's wind. It will take a variety of sources to replace Vermont Yankee. The Redona Project is part of the diverse solution."

VEC's near-demise in the bankruptcy years has not deterred the cooperative from experimentation and innovation, like developing its AMI "smart grid" infrastructure.

"Back in 2005 our members were ready to hang us," says Hallquist. "We've responded by working hard and using these technologies to help us. We needed some serious investment in our system, so we went to the Public Service Board [for approval of the expenditure] and doubled our capitalimprovement budget for the next 10 Unfortunately, the economy took a dive, and VEC's 9.2-percent rate increase hit its members at a tough time. VEC is now seeking an additional 1.88-percent increase to make up for the loss of commercial and industrial revenue resulting from the recession. But Hallquist is philosophical. "Compare it against the increase of oil costs," he says. "You've got to manage your system responsibly. People complain a lot more about a rate increase when the power goes out. We spent a lot of time explaining our goals to people, and when we were done only a small number were still angry. At least we're getting something for our money.' People understand that."



cores of central Vermont men and women, members of Washington Electric Cooperative, have stepped up to help lead the Co-op during its first 70 years, devoting countless hours of their time voluntarily by serving on the Board of Trustees (renamed the Board of Directors in 2002). In issues of *Co-op Currents* this year we have saluted the Trustees who served from 1939, the year to Co-op was founded, through the 1990s. This month we are pleased to present the names of all those who have served in the first decade of the 21st century, which includes your current Board of Directors. (Directors still serving are denoted by a *.)

*Roger Fox: 1991Charles Haas: 2002-2004 (served previously, 1992-1997)
Wendell Cilley: 1993-2008
Carla Payne: 1997-2003
Cornelia Swayze: 1997-2002
*Barry Bernstein: 1998Monique Hayden: 1998-2003
*Richard Rubin: 1999-

*Donald Douglas: 1999-Jay O'Rear: 2000-2001 *Marion Milne: 2003-*Kimberly Cheney: 2004-*Roy Folsom: 2004-Timothy Guiles: 2005-2007 *David Magida: 2008-*Andrea Colnes: 2008-



Washington Electric Co-op's Board of Directors in 2003. Front row, from left: Wendell Cilley, Carla Payne, Marion Milne, Richard Rubin, and Monique Hayden. Back row, from left: Roger Fox, General Manager Avram Patt, President Barry Bernstein, Charles Haas, and Donald Douglas.



VEC and the Holy Grail

Dave Hallquist, Vermont Electric

Arguably, the most significant undertaking by the Co-op's Board in this decade was the construction of the Coventry, Vermont, electric-generating station, seen here from atop the landfill that produces the methane that fuels the power-producing engines. Opened in 2005 and expanded in 2009, the plant produces an ever-growing portion of WEC's energy (now exceeding half, and increasing), at below-market rates.

Serving more than 10,000 member/owners in central Vermont. A rural electric cooperative since 1939.

LEDs Are Coming

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bulb" – are going to be phased out of production. The federal 2007 Energy Independence & Security Act (EISA) set standards for lighting efficacy that incandescent bulbs will not meet, beginning as soon as 2012.

"Efficacy" refers to the output of lumens, a measure of light, compared to the input of watts, a common measure of electric power. Put more simply, lighting efficacy means how much electricity it takes to make a bulb produce the amount of light it's supposed to. And the efficacy the EISA will demand in 2012 for "general purpose lamps" will be 30 percent higher than today's incandescent bulbs achieve.

As Efficiency Vermont, the state's energy-efficiency utility, interprets the situation in a power-point presentation published November 12, 2009 ("Forecasting the Lighting Future," source of the chart on this page), that means that two years from now incandescents will begin disappearing.

EVT goes on to explain that under EISA, "in 2017, new standards must be set for General Purpose Lamps/ Bulbs." If the U.S. Department of Energy fails to set new standards by then, "EISA requires 60-percent higher efficacy in 2020 [causing] phase-out of all current forms of incandescent."

But does that automatically open the door for LEDs? What about CFLs, the swirly compact fluorescent bulbs that Washington Electric Co-op and other champions of energy efficiency have been hawking?

"CFLs are a transition technology," says WEC Products & Services Director Bill Powell. "They use considerably less electricity than incandescents, and their lighting quality has improved to the point that most people don't notice a difference between CFLs and incandescent bulbs. But LEDs are going to be better, by a long shot."

Looking past 2020, here's how EVT compares the two technologies:

- LEDs will be much more efficient, at 160 LPW (lumens per watt) compared to CFLs (80 LPW);
- LEDs will last up to 100,000 hours, versus 8,000 hours or more for CFLs;
- LEDs will have better light quality and

manufactured with about 1 milligram of mercury – a small amount, but it requires that they be disposed of as hazardous waste. Frequently, hardware stores that sell CFLs will take the dead bulb when the customer buys a replacement.)

In summary, EVT agrees with Bill Powell: "[A]n increasing number of experts consider CFLs a transition technology."

And here's a tantalizing forecast: "Most lights in the home will be 5 watts or less," yet they will yield light comparable to what it now takes a 60-watt incandescent to produce.

Hurdles to overcome

But why are we talking more about the future than the present when we talk about LEDs?

"In my understanding, where these product falls short is in accurately reproducing the color tone and quality we're used to," says Powell. "LEDs put out wavelengths of very specific colors, and the way you get

> a high-quality light is by blending these wavelengths to achieve a white, readingquality of light. The LED alchemists are in that process, working toward an end product that will meet the public's expectations." Fluorescent lighting went through a comparable evolution. For years consumers disliked the pallid cast of fluorescent bulbs, until manufacturers got serious

about producing fluorescent light that mimicked the softer, orange-yellow light produced by incandescent bulbs. Today most users consider CFLs to be little different from traditional bulbs, and their advantages of lasting longer and requiring less electricity to produce comparable "lumens" have made them popular.

Another consideration, regarding LEDs, is cost. We're at the front-end of LED technology, and as we've seen with other technologies, product cost to the consumer is high (even though use-cost is low) until the technology matures.

Outdoor lighting: "A perfect application"

Meanwhile, there's a perfectly good

Here's the big news: LED technology will soon become standard for indoor home lighting, and what we've always thought of as "the light bulb" will be phased out of production. Co-op is now "road testing" LEDs for that purpose. Members who use commercial lighting, security lighting at their homes or businesses, illuminate parking lots or outbuildings or the walkways to their door, for example, should take note.

"Those are perfect

applications for LED lighting in its present design," says Powell. "Places where the quality of the light isn't critical, but where you can put them up and they stay there virtually forever and cost very little to operate. We're testing exterior products that thread into the conventional base that people usually have."

Even if you don't use that kind of lighting, be advised that change is coming: Today's conventional electric bulbs will be fading away sooner than you expect – which is a good thing for energy conservation, Vermont's and the country's energy independence and security, and to combat climate change.

And don't forget that even though CFLs are a "transitional technology," they beat incandescents by a country mile for those very same reasons. "They're the bridge to LEDs," says Powell. "We strongly advise our members to use them."

Think Now About Running For The Board

Deadlines Approaching For Candidates, Bylaw Changes

ashington Electric Cooperative will hold its 71st Annual Membership Meeting in May, 2010. (The exact date remains in question.) After meeting in Barre in recent years, WEC will be returning to the Montpelier Elks Club.

Although the Annual Meeting is several months away, it's time for members to begin thinking about running for a position on WEC's nine-member Board of Directors. Directors are elected to three-year terms, and each year three board seats expire. The incumbents who hold those seats can run for re-election if they choose to, but the process is equally open to qualified challengers. "Qualified" basically means Co-op members in good standing. Beyond that, the best qualification is an interest in serving on the board of an important community institution – the consumer-owned, not-for-profit utility that provides electric power to some 10,500 rural homes, farms, schools, and businesses in 41 towns in central Vermont. Like all democratic institutions, Washington Electric Cooperative functions best when more members participate.

Any Co-op member interested in running for the board should contact Administrative Assistant Deborah Brown at Washington Electric's office in East Montpelier. She will send out a packet of information that includes a petition and other materials needed to become a candidate. Completed petitions must contain the signatures of at least 25 WEC members, and will be due on **Thursday, February 18, 2010**. Debbie will provide further details when you call.

New directors are not expected to have specialized knowledge about co-ops or utilities; service on the board is a learning experience, and there has never been a more important time to participate in decisions relating to energy.

Bylaws petitions due sooner

Washington Electric Cooperative is governed by legally binding bylaws, and the annual election process provides members an opportunity to amend those bylaws. You don't need to be a lawyer to draft an amendment proposal. However, you do need to know whether the subject that interests you is addressed in the current bylaws, and what those provisions are. You can obtain a copy of WEC's bylaws by contacting Debbie Brown at the Co-op's office.

Along with your bylaw amendment proposal you need to submit a petition for its adoption with the signatures of at least 50 Co-op members (the petition form can be obtained from the Co-op's office). These materials will be due on or before **Wednesday**, **February 10**, **2010**. *Co-op Currents* will publish your amendment proposal just as it does when amendments are proposed by the

dimming capability than CFLs;	
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• LEDs contain no mercury. (CFLs are

use for LEDs. They work great for outdoor lighting, and Powell says the Board of Directors. It's your Co-op. Think now about participating.

LED versus Incandescent Products

The future, as predicted by Efficiency Vermont. While in 2008 the average household used 45 bulbs (37 incandescents, 8 CFLs, and zero LEDs), by 2027 the mix will be 2 incandescents, 7 CFLs, and 37 LEDs (total 46 bulbs). This will reduce your lighting-related electricity consumption from 1,410 kWh/year to 194 kWh/year.

Year	Incandescent watts/lamp	Incandescent lamps/house	CFLs watts/lamp	b Mix CFLs lamps/house	LEDs watts/lamp	LEDs lamps/house	Estimated total lighting wattage/household	kWh per year
2008	63	37	15	8	12	0	2,477	1,410
2017	44	7	13	32	6	7	764	435
2027	13	2	13	7	6	37	340	194

The Year That Was

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Greening of WEC

Our Co-op has made a conscious effort since the early 1990s to be more environmentally aware as we make decisions that affect our future. We will continue to be diligent in decisions we make concerning our long-term planning for power, the equipment we purchase for our distribution and transmission infrastructure, and in our internal operations.

We will also continue to encourage and support our members, in the spirit of Yankee ingenuity, to:

- Replace the lights in your homes and businesses with compact fluorescent bulbs;
- Replace outdoor service lights with ٠ motion sensor-operated lights closer to your homes;
- Replace old appliances with new, more-efficient ENERGY STAR® ones:
- Replace electric water heaters, stoves, and dryers with gas appliances that are more cost-effective to operate.

As part of our conservation effort, WEC hired a consultant, Spring Hill Solutions, to evaluate how well our Co-op was doing in its daily operations. The report, completed in August, highlighted efforts we have already made in recycling, replacing computers and other equipment with ENERGY STAR® high-efficiency ones, replacing heavy steel truck bodies with lighter aluminum bodies, and reducing vehicle idling. Our internal efforts are a work in progress, and will continue into 2010 and beyond as we develop a comprehensive plan to measure our progress.

Rate Design/Cost-of-Service

WEC filed a new Cost-of-Service Study and proposed Rate Design with the Vermont Public Service

Board (PSB) on October 27. When implemented, it will be our first new rate design in nearly 20 years. The rate design was based on several guiding principles:

- Fairness in allocation of costs by rate class;
- Concern for the impact on members in each class;
- Maintaining a lower-priced initial block of power for all members, to cover essential household needs;
- Ensuring that the second block of ٠ power reflects the marginal cost acknowledging the reality that going forward every new kilowatt-hour (kWh) WEC has to purchase or generate will be at increasingly higher costs.

The Vermont Department of Public Service (DPS) asked for an investigation of our proposed rate design; we expect it will be several months before the PSB makes its determination.

Coventry

In Coventry, Vermont, where WEC operates an electric generating plant fueled by landfill methane, the Co-op in 2009 expanded the building to accommodate a new, fifth engine, commissioning it on June 17. We project production to reach 50 million kWh for 2009, and 53 million kWh in 2010. Once all five engines are operating at full capacity the plant will be able to produce 63 million kWh annually. In November we held an Open House at the plant. More than 80 people attended, including WEC members and representatives from VELCO, VPPSA, and the DPS.

UPC Sheffield wind project

The wind project designed for Sheffield, Vermont, received PSB approval back on August 8, 2007. This year the Vermont Supreme Court upheld the PSB decision, leaving an Environmental Court hearing on a storm-water permit as the last appeal

issue outstanding before the project can get underway, hopefully next summer.

Staff

The Co-op has hired two new apprentices on the line crew, Kyle Harper and Mike Baril. Both men graduated from the Southeast Lineman Training School in Georgia prior to joining WEC. Kyle, a former marine who served in Iraq, grew up in Bellows Falls and now lives in Montpelier with his wife. Mike grew up in the Barre area and now lives in Cabot. Hans Pope-Howe earned his First Class Lineman rating after being with WEC for a number of years. We are fortunate to have several younger employees joining the line crew and working with our senior linemen, some of whom will be retiring in the relatively near future.

Right of Way

As part of your Co-op's efforts to improve our system reliability, under the direction of Dan Weston, Director of Operations, and Right-of-Way Management Coordinator Mike Myers, your Board of Directors has continued to approve increases in our ROW budget. We also support a danger-tree removal program and systematic checking and treatment of the system's 24,000 distribution poles. These measures reduce outages and extend the life of our infrastructure.

2010: WEC In The New Year

Stimulus: WEC will receive federal "Stimulus" funds, thanks to the success of a grant application submitted jointly by all the Vermont utilities and with the support of the DPS. These funds will enable us to accelerate the implementation of system-reliability projects in our four-year work plan. VELCO, the statewide transmission company, will be bringing fiber optic connections to our WEC substations, which will open up further, future options for the Co-op

to consider. NRECA, our national co-op association, will also be using stimulus money to test and evaluate various "smart" technologies, including smart meters, to determine which work and are field ready.

Construction Work Plan (CWP): In 2010 we will begin year three of our 2008-2011 construction plan, with upgrades to our distribution system. As part of the plan, we expect to rebuild our East Montpelier substation.

Legislation: We will continue to vocally support an increased and active state effort to help Vermonters make their homes and businesses more energy efficient in using all fuels, and ensure that Vermont's power supply becomes more renewable and less dependent on fossil fuels and nuclear power.

Special Thanks and Season Greetings

I want to thank my fellow Board members and officers, Vice President Roger Fox, Treasurer Don Douglas, Secretary Marion Milne; our Manager Avram Patt and the management staff; our line crew and engineering crew; our accounting and member-services staff, our right-of-way contractors, and all our other employees for ensuring that our Co-op runs effectively. The many hours and thought that goes into decisions is often unseen and unrecognized.

Please remember we always look forward to hearing from you, our members. WEC is your co-op. We have a great Co-op, and a team effort I am proud to be a part of.

As 2009 winds down and we move into the New Year, I would like to wish all of our members, your families, and our employees and their families, a very healthy and happy holiday season and a great New Year.



Product	List price	Member discount price
Max2	\$39.95	\$32.95 (save \$7.00)
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If you own a single item such as a TV, a VCR, a computer connected to the internet by a cable or satellite provider, audio equipment or pay TV service, without surge protection you'l have to make up the replacement cost out of pocket in the event of a surge striking. Full protection, and an iron-clad warranty for all connected equipment.

Your equipment is exposed to power surges until you connect your equipment to one of the Panamax heavy-duty Max2 family of products. Be safe, not sorry!

Call the Co-op at 800-932-5245 or visit us on the web at: www.washingtonelectric.coop/pages/prod.htm

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Serving more than 10,000 member/owners in central Vermont. A rural electric cooperative since 1939.

Thanksgiving Storm

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"We need to reiterate that electric utilities in Vermont – not just our Co-op, but all of them – do their absolute best to restore power quickly," said Weston. "But ultimately, people have to be prepared in the event of an emergency, and a prolonged outage is an emergency. People need a backup source of heat that does not depend on electricity – or they need to be able to get to a neighbor's house who does have backup heat. These storms are becoming, on average, more severe."

WEC has invested planning effort and money in improving its outage-response capabilities. The Co-op uses state-of-the-art outagediagnostic equipment to aggregate the information callers provide and compute the likely cause of the problem, so that crews know where to go and what to look for. (That's why, despite the difficulties getting through during storms, members should call and report their outages.) WEC has modernized its fleet, too, with four-wheel-drive trucks that can get where they need to go. The linemen and damage-assessment personnel are equipped with personal pagers so they can be reached, and Vermont's utilities coordinate with one another to send extra help where it may be needed.

But outages will happen. Please be ready for them, and be patient if the person answering the phone can't tell you exactly when your power will be restored. That person is not out in the storm in a truck, or at the end of a bucket lift replacing a fuse, or restringing a downed electric wire. That person's job is to take your information, which helps immensely in restoring your power, but they won't make promises the Co-op may not be able to keep.

Fluke outage darkens substation

On the Friday after Thanksgiving, WEC's staff knew something was brewing. There were scattered wind-caused outages and the weather forecast indicated the storm would pick up. Indeed, it peaked in the earlymorning hours of Saturday.

"We had 50 to 60 separate outages, places where we either had wires down or trees on the lines," said Weston. "Probably 50 percent of those outages were downed wires, which is a pretty involved repair job."

The areas most affected were Cabot and Walden, Orange to Corinth, and Tunbridge and Chelsea. The culprit was mainly high winds.

But in the midst of all that came a fluke occurrence on the Co-op's transmission line between East Montpelier and Maple Corner. A

Now, Call WEC for Mad River Glen Tickets

The geese have flown south, the temperatures have plunged, and ski season is coming! This year the Co-op has an improved deal for WEC members who ski at Mad River Glen – which is also a cooperative. You can now purchase day passes at the Co-op office. The ticket price varies depending on the day; weekday adult tickets are \$39.

WEC is a ticket retailer for Mad River Glen and members are eligible for special prices. You can call and order tickets by phone, paying with a credit card, then either pick your tickets up here or have us put them in the mail. The Co-op will fill orders placed from the website (http://www. washingtonco-op.com/pages/madriver.htm), but members must still either pick them up or have them mailed to your address. This is not an electronic ticket offer.

See you on the mountain!



porcelain insulator – which cradles the electric wire as it passes over the cross arm of a power pole – broke. The energized wire then swung down and made contact with the pole, and the pole caught fire. The wind fanned the fire, and within a few minute the pole burned through. The result was that everyone connected to WEC's Maple Corner substation lost their power – some 850 Co-op members (including General Manager Avram Patt and *Co-op Currents* layout director Tim Newcomb, who live in Worcester).

"Insulators are designed to support

the wire in a vertical fashion," Weston explained. "Probably the wind hit the wires from the side – remember, it's high off the ground and the wind is stronger – and the insulator couldn't withstand that lateral pressure."

The Co-op had to divert several crews from elsewhere to replace the pole and restore power to the substation.

Deer season always seems to bring some kind of storm, Weston said – but this time we almost got through it without a problem. Fate caught up to us on the final weekend. What are you gonna do?







With money donated from WEC's Community Fund, the Co-op contributes each year to the Stuff A Truck event for the Central Vermont Food Shelf, which is sponsored by radio stations "Frank-FM," Froggy-FM," and WSNO, as well as the Salvation Army and the Vermont National Guard. Four WEC linemen shopped and delivered the goods this year at the Berlin Mall, including Hans Pope-Howe (top photo) and Donnie Singleton (left photo). All four are pictured in the center photo: From left, Hans; National Guard member, linemen Jason Preston and Larry Gilbert, Donnie, and a volunteer.

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