

# WEC CO-OP CURRENTS

Vol. 63, No. 1

The newsletter of Washington Electric Cooperative, Inc., East Montpelier, Vermont.

January/February 2002

## WEC Sells Its Shares Of Vermont Yankee

*Methane Replacement Makes Co-op 40-Percent 'Green'*

By Avram Patt  
General Manager

January 16, 2002 was a milestone in the history of Washington Electric Co-op. On that day at a law office in Burlington, I signed the back of some stock certificates, concluding the sale of WEC's ownership interest in the Vermont Yankee Nuclear Power Corporation back to that company. After several months of negotiations, your Board of Directors approved an agreement that secured a beneficial outcome for our Co-op and our members in the face of the proposed sale of the plant to Entergy, a large national company that has in recent years been buying up nuclear power plants.

As a result of the settlement we have received a fair value for the shares that we had held since 1970. We are also being released from our Vermont Yankee purchased-power contract at the end of



**"For the first time in more than 30 years, we will neither have an ownership interest in, nor a power supply contract with, a nuclear power plant."**

—Avram Patt

February, nine months earlier than originally planned. At that point, for the first time in more than 30 years, we will neither have an ownership interest in, nor a power supply contract with, a nuclear power plant.

I am also pleased to report that we have already replaced most of that nuclear power with energy generated from a renewable source, landfill methane, and at a lower cost.

### The history

As I have reported a few times over the last two years, Washington Electric Co-op, along with three other Vermont consumer-owned utilities (Burlington Electric Department, Village of Lyndonville Electric Department and Vermont

Electric Co-op), had been a minority stockholder in Vermont Yankee since the plant was built. WEC's ownership share

*continued on page 3*



*Fran Douglas' fifth-graders, with their guests from VEEP (at rear).*

## Waits River Fifth Graders Are Wired

*VEEP Program On Electricity Turns Out To Be Fun!*

One by one, the kids climbed on the bike and pedaled their hearts out. There was no wind in their hair because the bicycle was stationary, its rear wheel attached to a small generator that guest-instructor Andy Shapiro had rigged to a panel of fluorescent and incandescent light bulbs. Their classmates cheered them on as they pedaled hard, trying to bring the bulbs to full illumination.

Sometimes it was easy, particularly

when all the switches were in the "off" position. But when Shapiro turned on the 60-watt incandescent bulb – the "traditional" kind of light bulb many of us use in our homes – the pedaling got hard. And when he flipped on the 100-watt bulb the rider would grunt and pump for all he or she was worth. Switching both of the bulbs on together called for a burst of power that few of the fifth-graders could achieve and none could sustain; when

*continued on page 4*

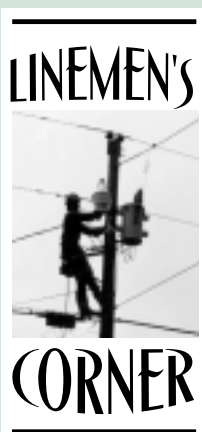
### Inside

**Just in: Board names Haas to fill vacancy.** Also, other Board news. Page 8.

**Picking up where we left off: Bylaw amendment** on voting and finances continues the work begun last year. Two proposals for 2002 are discussed on page 6.

**VEEP in the schools.** Our stories on the Waits River Valley fifth-graders and the program that teaches youngsters about electricity and conservation continue on page 4.

**Linemen's Corner: New Co-op Currents feature** tells members, at a glance, where our crews are working, and why.



**Washington Electric Cooperative**  
East Montpelier, VT 05651

## Members Write

**Co-op Currents** welcomes letters to the editor that address any aspect of the Co-op's policies and operations, or any matters related to electricity. Readers can write to **Co-op Currents**, P.O. Box 8, East Montpelier, VT 05651. Letters to the editor will not be published in the Annual Meeting (April) issue.

### On Wind Power and Birds

Editor, *Co-op Currents*:

Please do not consider this as a letter meant to find fault. Wind power is probably a good thing for Vermont.

However, some years ago in another state I heard the people there discussing the possibility for their state. Some of them had very real concerns lest birds, particularly migrating ones, might frequently fly into the blades of windmills and meet their doom.

I should hate to think our quest for cheaper power would result in decimation of our avian wildlife. How real is this possibility? Has anyone give it any thought?

Doris Wehrman  
East Calais

#### General manager responds:

I have replied in greater detail to Mrs. Wehrman directly, but will briefly summarize here. Extensive studies have been done on the impact of wind turbines on birds, both nationally and at the Searsburg project in southern Vermont. Based on these, it does not appear that wind projects will have a

significant negative impact in this regard.

First, projects being planned in Vermont, including any WEC may be a part of, are tiny compared to existing projects out west and in Europe. The largest Vermont project might possibly involve 40-50 turbines on towers, whereas some western projects have many hundreds and even thousands of turbines. In the few cases where there has been a significant impact on birds, this has been due to unique characteristics concerning location, size and design of the towers.

Any project WEC is involved with will receive extensive scrutiny before approval, and this will include a full environmental review. There is no source of electricity, large or small, that does not have some environmental impact. It is my belief that the greatest concerns about wind projects in Vermont will have to do with aesthetics, as these projects will by necessity need to be in visible places. Vermonters who want to decrease our dependence on fossil fuel, nuclear and other high environmental-impact sources will need to wrestle with and balance their desire for renewable energy sources with the fact that even these sources will have some impact on the landscape we live in.

The Co-op intends to keep our members informed and involved as our wind

project develops, and to work with communities, property owners and others to find a site that is both efficient from an energy-production perspective and sensitive to the concerns of the community where it is located

Avram Patt

### Who Pays For Lost Wrightsville Power?

Editor, *Co-op Currents*:

I read with interest the article, "Co-op Drains Reservoir In Police Investigation," in the December 2001 issue. It was informative. There were, and are, still some unanswered questions, however.

The article stated in the next-to-last paragraph, "By Saturday, December 1, the reservoir had recovered and WEC was generating power again." Try as I might, I could not figure out from the article when production of electricity had stopped.

The question was, what date did generation cease? From that I would be able to figure out how many days we were without our approximately 5-percent base power. Since I heard of no blackouts during that time I assume that the power which could not be generated from the Wrightsville dam was replaced by other (more expensive?) power.

That brings me to the real question, which was not addressed in the otherwise good article. What was the extra cost to WEC? I think it is a valid question. I think an equally valid question is: Who pays that extra cost?

I know that the family of Audrey Groat would like closure. I am equally sure that the police would like to close the case. Both laudable goals. But the chance of finding ... forensic evidence after eight years is nearly nil.

A drought is not the time to waste 210 million cubic feet of water. I do understand that the Co-op thought it had no choice but to comply. Was this a court order? Which court? Maybe it was only a directive from a state agency. Which one? PSB? ANR? Public Safety?

Perhaps there was a choice. Maybe that part of an obscure document which has been overlooked a lot lately which says, in part, "The right of the people to be secure in their homes and persons from unreasonable search and seizure shall not be abridged," gives the corporate person, WEC, the right to demand a search warrant issued by a magistrate based on probable cause. Did we?

I still want to know: What cost to WEC, and who pays? I think that in the event this gets factored into a rate case, the agency involved – if PSB wrote the order – should (excuse) itself from decision-making. I also think that our state govern-

ment should always be accountable. Was this search reasonable? If not, is the "taking" of 5 percent of our base supply to be replaced by more expensive power, a compensable taking?

In other words, should Public Safety et al pay for this, and not the ratepayer/members of WEC?

Peter Winters  
Middlesex

#### General manager responds:

The 5-percent figure cited in the article is a rough average of what Wrightsville contributes to our total supply. The actual number in any given year depends on several factors, weather being the major one. Because of the drought, Wrightsville (as well as most other small hydro facilities Vermont) had actually not been generating anything at the time the drawdown began, and for much of the fall and late summer before that. This is because our license to operate the facility requires that we maintain a specific minimum water flow below the dam. When the reservoir gets below a certain level we can't maintain that minimum flow and generate electricity at the same time. Therefore, even without the drawdown, Wrightsville would have contributed less than 5 percent to our supply this year.

While the drawdown took about two and a half weeks, it then took time for the reservoir to refill. Because we had some rain, the refilling was actually quicker than expected, and we began generating again on the evening of December 1. Since output can vary so greatly depending on water levels, the value of lost output is not best measured by how many days we weren't generating, but by the actual volume of water that was lost in the drawdown ... which would have generated a specific amount of electricity regardless of weather-related variables.

The power not generated was replaced by automatic spot purchases in the wholesale market. All utilities rely on spot purchases to fill gaps caused by seasonal peaks or the temporary loss of other sources. While this was power we otherwise would not have needed to purchase, the wholesale spot market cost has actually been very low.

It was the Agency of Natural Resources that issued an Administrative Order to do the drawdown, at the request of the Department of Public Safety. The Order was issued to ANR's Department of Environmental Conservation, as the superintendent of the dam and reservoir, which are

continued on page 8

## Co-op Currents

*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 35¢, which is included in the basic monthly charge to each member. Periodical postage rates at East Montpelier and at additional offices. Postmaster: Send address changes to *Co-op Currents*, P.O. Box 8, East Montpelier, Vermont 05651.

#### Board of Directors

President	BARRY BERNSTEIN	1237 Bliss Road, Marshfield, Vt. 05658 Bbearvt@aol.com	456-8843
Vice President	ROGER FOX	2067 Bayley-Hazen Rd., East Hardwick, Vt. 05836-9873 rfox@vtlink.net	563-2321
Treasurer	DONALD DOUGLAS	21 Douglas Rd., East Orange, Vt. 05086 Runasimi2@aol.com	439-5364
	WENDELL CILLEY	5 Warsley Road, West Topsham, Vt. 05086 Cilley@sover.net	439-6138
	MONIQUE HAYDEN	407 Weir Road; Williamstown, Vt. 05679 mkrvt@aol.com	433-6170
	CORNELIA D. SWAYZE	RR 1, Box 158; Tunbridge, Vt. 05077 corneliaswayze@innevi.com	889-5556
	CARLA R. PAYNE	1554 US Rt. 2; West Danville, Vt. 05873 cpayne@together.net	563-2390
	RICHARD RUBIN	3496 East Hill Rd., Plainfield, Vt. 05667 richardrubin@hotmail.com	454-8542

AVRAM PATT  
General Manager  
Avram@Washingtonco-op.com

WILL LINDNER  
Editor  
Willind@aol.com

TIM NEWCOMB  
Layout

#### Editorial Committee

Avram Patt Donald Douglas Wendell Cilley Will Lindner

The Board of Directors' regularly scheduled meetings are on the last Wednesday of each month, in the evening. Members are welcome to attend. Members who wish to discuss a matter with the Board should contact the president through WEC's office. Meeting dates and times are subject to change. For information about times and/or agenda, contact Management and Programs Administrator Denise Jacques, 802-223-5245.

## Vermont Yankee

continued from page 1

was 0.6 percent, and the four minority stockholders together owned less than 6 percent. The majority owners include several New England investor-owned utilities, with the controlling interest held by Central Vermont Public Service Corp. and Green Mountain Power.

The power we received from the plant (about a third of our total supply) came to us not by virtue of being owners, but through a "secondary purchasers" agreement that also included a number of non-owner municipal utilities. That power supply agreement was scheduled to terminate at the end of November 2002, and we had begun planning a few years ago for replacing it when the time came.

The sale proposal to Entergy that is currently being reviewed by the Vermont Public Service Board (PSB) represents the second time in the last three years that the owners have proposed a sale. (The first, to AmerGen, was not approved by the PSB.) In each case, the four minority stockholders worked closely together to represent our mutual interests, which for a variety of reasons were not the same as CVPS', GMP's or the other sponsor owners.

Although the original proposal offered to us by the owners when the Entergy sale was announced last year was not acceptable, the settlement we reached in December and which was concluded in January was mutually agreeable to all concerned. Your Board of Directors was actively involved in this process, and I also want to especially thank the Co-op's attorney, Jerry Diamond, for the role he played not just in reviewing the legal aspects of the agreements, but in the negotiations themselves.

### Terms of the settlement

Although the Entergy agreement is still under state review, the majority owners agreed to buy out the minority owners' shares now, regardless of whether the sale ultimately goes through.

WEC received a total of \$559,130 for our 2,431 shares. The value of our shares has been shown in our financial statements since 1970 as \$271,118, so we did achieve some gain over that time span. However, the stock certificates had been held by our principal lender, the Rural Utilities Service (RUS), as security on all our construction loans. In order for RUS to release the certificates to us, WEC agreed to restrictions on the use of the funds we received for our shares. Basically, the proceeds must be used for new securable activity. These activities include construction on our distribution system, or investment in new generation sources.

The settlement also lets the minority stockholders out of our secondary purchasers' agreement for power supply at the end of February, rather than at the end of November. In our power planning and financial forecasting, we had



Vermont Yankee nuclear plant in Vernon.

assumed that replacement power for Vermont Yankee would be at a lower cost. Since Vermont Yankee has been a major source of our supply all these years, replacing it at lower cost was the chief reason why we expected these few years to be a period of relatively stable rates, even as other costs (labor, taxes, insurance, material and supplies) continue to rise.

The prediction that replacement power would be less expensive has proven to be correct, and the settlement allows us to get that benefit a little earlier.

Another condition of the settlement was that WEC and the other three minority stockholders would withdraw from the PSB case investigating the Entergy proposal, and would not take a position on the sale in that or other public forums. The sale does require both PSB and federal approval, and the Vermont Department of Public Service (DPS) and other organizations that have intervened will continue to investigate and take positions on the matter before the regulators make their decision later this year.

### Renewable replacement power

As has been reported in previous issues of *Co-op Currents*, we have been actively working on meeting our future power supply needs, including the replacement of Vermont Yankee, from renewable sources. Our efforts, even before the recent announcement of our wind energy grant (see December 2001 issue) have focused on long-range supply options, including the possibility of WEC owning all or part of renewable projects if doing so lowered the cost to us.

As we work on these longer-term projects, I am pleased to inform our members that WEC has in the meantime signed a contract that will replace most of our Vermont Yankee power for the next three years with power from a landfill methane generating facility in New Milford, Connecticut. This contract replaces 2.25 MW (megawatts) of the 3.1 MW we have been getting from Vermont Yankee.

All landfills produce methane, which is a major greenhouse gas. In order to

reduce these methane emissions, it must be burned off. This can either be done by (wastefully) flaring it, or by putting it to good use generating electricity – thus also reducing the need for generation from nuclear, coal, oil, natural gas or other environmentally harmful sources. Thus, landfill methane generation is considered a renewable or "green" source.

The landfill in New Milford has been producing electricity for years, which was sold to another New England utility. That

contract expired, and the landfill is closed and no longer accepting new trash. However, it is expected to continue producing sufficient methane to generate 2.25 MW (and perhaps more) for WEC for at least three years. Working with our energy supply consultant, La Capra Associates of Boston, we were able to secure a good price and other favorable terms. We see this contract as a "bridge" that will allow WEC to further develop and increase our renewable energy sources for the longer term.

Although there is still much work to be done, we are very proud to say that as of March 1, this landfill methane contract, together with our existing renewable supply from small-scale Vermont hydro and woodchip facilities, means that more than 40 percent of the electricity the Co-op supplies to our members will be coming from sources that do not use nuclear or fossil fuels, do not create high-level nuclear waste, and do not have massive environmental impact on the landscape (such as Hydro Quebec). Over the next few years, we will work hard to improve that percentage even further.

Ending our use of nuclear power, while significantly increasing our renewable supply, is a major step forward for Washington Electric Co-op. We hope it also sets an example for others as well.

## Right-Of-Way Reclearing Projects Scheduled

*Affected Members with 'Special Trees' Should Call the Co-op*

### For the Period Through June 2002

The Co-op will continue working to improve service reliability by reclearing power-line rights of way in the areas described below. Right-of-way reclearing normally involves removing trees and pruning vegetation for 15 feet on either side of a single-phase distribution line, and for 25 feet on either side of a three-phase main distribution line. Except where noted, all of these projects involve single-phase lines, those carried by poles without cross-bars. Reclearing projects often involve a tap. That's where a single-phase line takes power from another line.

Throughout the year, post cards are mailed to members notifying them that right-of-way maintenance is to take place. Also, WEC's automated message-delivery system will place a phone call (if a phone number is on file) to all households affected by such maintenance projects up to two or three weeks before work on the property is to begin. Calls will be placed in the evening when most members are likely to be home. If no one answers, Co-op staff will attempt to reach that member during the day.

Because the evening calls are automated, they cannot hold the line if, for example, a child answers. If you believe you may have received a call from WEC, please call during office hours to check. If you are notified that a portion of your property is to be recleared and you especially hope to save any particular trees that are within the right-of-way, call the Co-op.

The Co-op's Right-of-way Management Coordinator Mike Myers, also a forester, will be happy to talk with you about any problems.

**Cabot:** West Hill Pond to Bothfield & Son's (CA 37-B).

**Chelsea/Vershire:** 3-phase line from Black Hawk Road to Ward's Garage and Goose Green Road.

**Vershire:** Tap from Ward's Garage to Libby Bricker's horse farm on Route 113.

**Vershire:** Line from Vershire Village along Route 113 towards West Fairlee and the end of the line.

**Worcester:** Lines along Hampshire Hill and Hancock Brook Road.

**Barre/Williamstown:** Lines along West, Falls Bridge, and Kingston Road.

**Corinth:** Tap from Brook Road along Center Road to Corinth Center.

**Corinth:** Line from Alice Knapp's (CO 41) along Pike Hill Road to Richardson Road.

**Plainfield/Barre/East Montpelier:** 3 phase line from corner of Lower and Flood Road along Mitchell Road to Route 14 and the Pine State tobacco warehouse.

**Calais:** Tap to Ann Lynn (CS 54-J).

**Tunbridge:** Tap along Drew and Hoyt Hill Road to Fred Tuttle's (TU 103).

**Walden:** Transmission line between Cabot Road and Houston Hill Road.

**Williamstown:** Route 14 tap to Palmer Martin (WIL 162).

## Waits River

continued from page 1

the rider would look back at the panel the bulbs would be pulsing dimly. The kids knew that no one could read, cook or play games by that faint light.

But there was more to this lesson, which took place one January morning at the Waits River Valley Elementary School as snow fell softly outside the window. Shapiro turned off the incandescent bulbs and switched on one, then both, of the squiggly 23-watt fluorescent bulbs. The light was approximately equal to that produced by the round, incandescent bulbs – but, boy, was the pedaling easier!

Suddenly, the youngsters understood the real meaning “energy” when the word is applied to the production of electric power. It actually means energy! The same kind of energy children discharge in the classroom and playground.

And they grasped that, because even they can’t produce limitless energy, the environment can’t either.

“So if we have a choice about whether to leave a light on or not, what do you think we should do?,” Shapiro asked.

The kids already knew what answer; surely they could hear their parents’ impatient instruction in their memories. But this time they bellowed it out with what a newfound conviction.

“Turn it off!,” they called.

### Where VEEP comes in

Fran Douglas’ 23 fifth-graders – most of them the children of Co-op members because their rural Orange County homes get their power from WEC (as does the school itself) – had been studying a unit on electricity.

“It’s a standards-based course,” Mrs. Douglas explained, referring to the Vermont Framework of Standards and Learning Opportunities that the state Department of Education (DOE) provides as both guide and requirement for public school classrooms. “The focus is on teaching kids the basics about electricity and circuits. Most of the work is done with batteries and bulbs.”

Perhaps surprisingly, the Waits River Valley teacher (whose husband, Don Douglas, serves on WEC’s Board of Directors) said the course is popular with the children. “It’s very hands-on and open to exploration,” Mrs. Douglas said. “They have a good time with it.”

The fifth-graders have studied “conductors” (water, wire and other materials that convey electricity) and insulators. They’ve built series and parallel circuits using batteries, wire and flashlight bulbs, and soon will construct cardboard houses, install small bulbs, and attempt to wire them so that they can switch on a light in one diminutive room and not have every light in the house go on.

It’s been a successful educational experience, but Fran realized it did not present the whole picture of electricity. Where does power come from? How is it



Above, Erin Brannen of the Vermont Energy Education Project helps students Connor Murphy, left, and Francesca Romagnoli find the “Faraday’s Coil.” Below, Brandon Van de Berkt pedals hard enough to light the fluorescent bulb as VEEP’s Andy Shapiro observes.



produced, and at what cost to the earth and its resources?

This was where VEEP came in – the Vermont Energy Education Program. VEEP provides curriculum and instruction in electricity, conservation and the scientific method for K-12 school systems, as well as professional-development courses for teachers. She contacted the organization through WEC, and on January 15, 2002, VEEP Director Frances Barhydt, and instructors Andy Shapiro (a WEC member and professional energy consultant) and Erin Brannen gathered in her classroom.

What followed was 90 minutes of high-energy educational jammin.’ Who knew electricity could be this much fun?

### ‘One of those cow things’

Brannen started things off with a brief history lesson, taking the students from wintry Waits River back to Scotland in the early 1800s, when an inventor named Michael Faraday discovered a principle crucial to generating electricity.

“Does anyone know what this is?,” she asked, holding up a small metal cylinder.

Someone was bound to know; after all, these were country kids from Vermont.

“It’s one of those things that you put in a cow in case it swallows something metal, so it doesn’t pierce their stomach,” a student volunteered.

“Right,” said Brannen. “It’s a cow magnet.”

Then she passed it back and forth through a coil of wire, saying that Faraday believed this action would stimulate a current of electrons. “You can think of it as the magnet pushing the electrons, the same way it would push little iron filings,” Shapiro explained.

By 1831, the Scotsman had perfected a magnet-and-wire device called Faraday’s Coil, the central component of the turbine. The more electricity you needed, the bigger the turbine had to be, but rotating a large turbine required force. So people harnessed waterfalls, and later built dams in the riverbeds to divert water through the turbines.

Steam was another way to power turbines. But to generate steam, you must boil water. Brannen asked the class how many different ways they could think that we produce steam to make electricity. Hands shot up, and the children rattled off several: oil, gas, coal, wood, nuclear (fission); someone said solar panels, and somebody mentioned that wind could turn turbines without steam.

Then Fran Douglas broke the class into small groups to study these alternatives, using worksheets provided by VEEP and help from the adult instructors. In 15 minutes the groups could identify the Faraday’s Coil in each kind of turbine and list the advantages and disadvantages of the fuels they had studied.

The kids in the hydropower group knew that with water to turn the turbines there was no need for steam, and consequently no need to burn fuels that produce air pollution. But they understood that dams impede the natural flow of rivers and cause ecological damage (though they needed instruction in the term “ecological”). The students in the geothermal group knew that with their source of fuel the heat already existed; but geothermal heat (produced naturally within the earth) is not widely available. The coal group reported that their fuel was abundant and inexpensive, but caused air pollution and acid rain, and was dangerous to mine. Oil and natural gas burn more cleanly than coal, said the group that had studied them, but must be shipped long distances – and at least a few of the children had heard of the Exxon Valdez.

Nuclear energy caused no air pollution, but its disadvantages, the children reported, were that nuclear plants are the most expensive generating stations to build and they produce waste that remains deadly for thousands of years. The solar group was able to explain how sunlight, reflected off mirrors, can be concentrated to make steam from water to turn a turbine, and how the sun can make electricity directly with photovoltaic panels. These systems produced no harmful waste, but the sun doesn’t always shine in Vermont, and someone added that there’s not always enough wind to power turbines, either.

### Window

With their new appreciation for the human and environmental costs of generating electricity, the fifth graders wanted to know about the difference between incandescent and fluorescent light bulbs. Shapiro held up a long, tubular fluorescent bulb – the kind that were mounted two-by-two in the 16 fixtures on the classroom ceiling – and explained that there was no filament in these bulbs, only a gas that filled the cylinder and glowed in response to the electric charges.

“What kind of gas is it?,” the class wanted to know.

“It’s mercury,” Shapiro said. But he was now talking to bunch of environmen-

talists, and they knew mercury was dangerous. "That's why we have to dispose of fluorescent bulbs properly," he responded. He also informed them that mercury is a byproduct of electric generation from fossil fuels, going directly into the atmosphere; so using efficient light bulbs actually reduces the amount of mercury entering the environment.

Finally, Shapiro challenged the class to figure out how many bicycles-attached

-to-generators it would take to produce enough electricity to light their classroom. Eagerly, the students calculated the combined wattage of the room's 32 overhead fluorescent bulbs and decided the answer was 10 bikes, constantly being pedaled – which would leave no time for studying or recess. They expanded their calculations to include the whole school, and grew even more convinced that there was real value to conserving electricity.

After class, Douglas said VEEP's presentation had made a big impression.

"The fact that so much of it was interactive and hands-on was very helpful," she said. "They were completely engaged, the whole time. (The lesson) gave them a personal perspective on energy efficiency because they experienced it first-hand on the bicycle."

Soon her students will be building and wiring their cardboard houses. All those

houses will be powered by batteries. But one house will have its batteries charged with electricity from a tiny solar collector that Shapiro left behind. When the sun shines through the classroom window, the little panel will convert it into electricity to re-charge the batteries.

And the fifth graders of Waits River Valley Elementary School will be able to explain how.

## Hands-On, Minds-On

### VEEP A Resource For Area Schools And Teachers

The Vermont Energy Education Program (VEEP) is in the business of creating informed, intelligent energy consumers and turning them loose upon the world to do good. With the same goal in mind, Washington Electric Cooperative stands ready to facilitate VEEP's work by helping area schools take advantage of what the organization has to offer.

VEEP conducts classes and workshops in about a dozen schools each year, and also provides professional-development programs for teachers.

"We want to accomplish two things with the students," says VEEP energy scientist Andy Shapiro of East Montpelier. "We want to give students an awareness of energy and energy-efficiency, so that they understand how much effort goes into producing the electricity that goes on when you turn on that light switch. And we want to connect that awareness with environmental issues."

Ultimately, the goal is to replace helplessness and complacency with a sense of empowerment.

"It's no good just to reveal the problems of global warming and pollution without showing the students that there's something they can do about it," Shapiro

says. "And that 'something' is (to practice) energy efficiency."

When people understand the connection between energy efficiency and the natural and economic workings of the world, they become wiser consumers and better stewards of the environment.

The Vermont Energy Education Program was founded in 1979 by the state Department of Education and the Vermont Department of Public Service. It is now broadly affiliated with participating electric utilities, school districts and colleges, and the Vermont Institute for Science, Math and Technology (VISMT). The program is administered by the Vermont Energy Investment Corp. (VEIC), a Burlington-based non-profit that promotes energy efficiency.

VEEP provides curriculum and instruction for students in elementary, junior high and high schools. Director Frances Barhydt, of Lyndonville, has taught at virtually all educational levels, including graduate programs. Her specialty is professional development for teachers in science instruction methods.

In central Vermont, VEEP has developed an ongoing relationship, now in its fourth year, with the K-12 school in Cabot (where many students are from WEC-



Vermont Energy Education Program Director Frances Barhydt, with fifth-graders Nicholas Berner, left, and Kayla Musty.

member families). There, VEEP works closely with math and science teacher Charles Wanzer (also a WEC member).

"We have the elementary students build models of electric generators," says Shapiro, "and the junior high students sometimes build solar-powered model cars. The seniors participate in what we call the Solar Challenge, where they make solar collectors to heat water. They might be skeptical at first," he joked, "but once they've scalded themselves with solar-boiled water they're sold."

Cabot students have become advocates for energy efficiency in their school. They took an energy presentation to the school board, and have worked with Wanzer and other teachers to implement conservation techniques.

Bill Powell, products and services director at Washington Electric Co-op, frequently attends and participates in classes presented by VEEP. "We try to be represented at these events," says WEC Manager Avram Patt, referring to Powell's involvement, "because VEEP is promoting education and energy aware-

ness, which are an important part of our public mission. We help schools cover the costs of VEEP's presentations. We would encourage schools in the communities that the Co-op serves to take advantage of this opportunity."

You can contact VEEP by email at [veep@together.net](mailto:veep@together.net) (or use Shapiro's email address: [ashapiro@together.net](mailto:ashapiro@together.net)); or write to Andy Shapiro at 45 Perkins Road, Montpelier, VT 05602.

### Marketplace

**FOR SALE:** Morris chair; old cupboard; cedar chest; old trunk; gate-leg table; new white sink vanity top; miscellaneous old doors; small bedside table; wooden ironing board; old wooden sewing box; 12-inch round braided rug. Call 244-1565.

**FOR SALE:** 1996 Saab 900 SE. Leather, loaded; 80,000 miles. Warranted. \$8,900. Call 244-1565.

### Deadlines for Board Candidates, Bylaws In 2002

This year four seats on Washington Electric Cooperative's nine-member Board of Directors will be up for election at the time of WEC's Annual Meeting, scheduled for Tuesday, May 21, 2002. Board members are elected at-large. Members interested in offering themselves as candidates for positions on the board must gather the signatures of at least 25 Co-op members on a petition and present it at WEC's headquarters on Route 14 in East Montpelier. The deadline for submitting the petitions is Friday, March 22, 2002. The Co-op's office can provide guidance and information about the petition and election process.

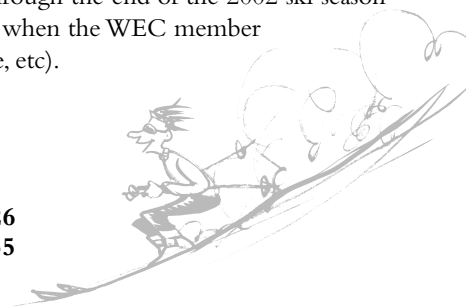
The annual meeting, and the member-voting that accompanies it, are also Co-op members' opportunity to present amendment proposals for WEC's bylaws, which govern many aspects of the Co-op's functions and its relationship to its member-owners. Copies of the bylaws are available at the Co-op's office, and WEC members can receive guidance from the Cooperative in how to present an amendment for the voters' consideration. The deadline for proposing amendments for the May 21 Annual Meeting is Monday, February 11, 2002. Members must submit petitions with the signatures of at least 50 Co-op members by that date.

### Mad River Glen Renews Discount Offer to WEC Members

Washington Electric Cooperative (WEC) is proud to offer a member discount at the nation's only cooperatively-owned ski area, Mad River Glen in Waitsfield, Vermont. This discount is valid for WEC members through the end of the 2002 ski season (or April 2002). This discount is valid only when the WEC member provides sufficient photo ID (driver's license, etc). Call the Co-op to get your coupon.

MAD RIVER GLEN'S  
2001 – 2002 SPECIAL TICKET PRICING:

Weekday Co-op Member price . . . \$26  
Weekend Co-op Member price . . . \$35



# Board To Propose Two Bylaw Revisions In 2002

## I. Amendment Would Define Members' Power Over Loans

Nearly a year has passed since the members of Washington Electric Cooperative voted for changes in WEC's bylaws designed to give the Co-op more maneuverability in today's electricity and energy marketplace. Members may recall, however, that last year's amendments were only the first stage of a two-part process. With the 2002 Annual Membership Meeting approaching (May 21), it's time to consider the second step.

The 2001 amendments brought our bylaws closer into compliance with the Vermont statute that governs electric cooperatives. The statute had been revised the year before by the state Legislature, and WEC needed, in some respects, to catch up with those alterations by updating its own bylaws. But some of the changes could only be made one step at a time, setting the stage for a follow-up effort this spring.

Compared to last year's amendment proposals, the issues this year are more straightforward and easier to comprehend. This article discusses proposed new voting thresholds for important financial transactions that could, potentially,

take place in WEC's future. Since Washington Electric is owned by its customers (members), state law requires that they be given the deciding vote in certain matters having to do with investment and equity.

The potential transactions include:

- mortgaging Co-op property to finance business activities;
- investing member equity (specifically, in projects WEC might undertake to provide a broader range of communications- and energy-related customer services);
- selling the Co-op, or selling or leasing any significant part of Washington Electric's property.

**Mortgaging Co-op property.** Not all mortgage transactions undertaken to secure operating capital need approval by the Co-op's members. In fact, most do not. Electric cooperatives borrow federal funds against their mortgages just about every year. WEC's cyclical work plans, which include costly, top-priority projects like the construction last summer of a replacement substation in Moretown and

a similar effort that will be undertaken soon in South Walden, are financed through mortgage loans from the Rural Utilities Service (under the Department of Agriculture). Rural electric co-ops borrow against their mortgages from RUS to have the resources it takes to maintain and improve their operations and infrastructure in a capital-intensive service sector.

Yet electric co-ops now exist in an altered regulatory environment. The bylaw amendments WEC members approved overwhelmingly last year (913-69) responded to changes in state law that, for the first time, allow Vermont's electric cooperatives to borrow from regional lending institutions (previously, their only sources of borrowed capital were RUS and another national program).

The revised statute also permits co-ops to offer their members certain services, not directly connected to the provision of consumer electricity, that investor-owned utilities have always been allowed. If they choose, electric co-ops can, for example, offer propane and oil, cable TV and various communications services. While WEC is weighing alternatives in this direction, nothing presently under consideration would require loans or a substantial investment. Nevertheless, with the bylaw revisions already in place

Washington Electric is a step closer to being able to make such investments if a good opportunity arises.

What would be needed, of course, is the money to do so. And this is where the members' authority comes in, relative to mortgage loans.

The statute divides mortgage loans for electric co-ops into two areas: a) those providing money for "the ordinary course of the cooperative's electric business" (providing electricity for rural consumers); and b) loans for other energy-related projects. It grants boards of directors full mortgaging authority for the former.

But a mortgage loan to finance energy- or telecommunications-related projects separate from its electric distribution operation is another story. To proceed with such a loan the co-op would have to obtain the approval of *two-thirds of those members who voted on the proposal*. (Note: That's not two-thirds of WEC's 9,000-plus members, but two-thirds of the participating voters.)

Here's an example: When WEC borrows money for the construction or rehabilitation of its power lines the Board of Directors finalizes the loan on its own. But if WEC wanted money (in a sufficient quantity to necessitate a mortgage loan) for buying fuel cells to lease to its members, the Board would have to arrange for

## II. Conflicts Of Interest; Which Ones Really Matter?

As WEC's staff and Board of Directors complete the work they started last winter – and ask the membership to do the same by approving bylaw amendments related to mortgaging and financing – they are tackling another bylaw subject, as well. The Board expects to offer a second amendment this year, dealing with director "conflicts of interest"

The aim is to reform a section of the bylaws that could unnecessarily keep people with useful skills and experience from serving on WEC's nine-person Board of Directors.

Just as the finance-related amendment proposal (discussed in the accompanying article) would make WEC's bylaws legally current – through conformance with the revised Vermont statute on electric co-ops – the conflict-of-interest amendment would make the bylaws culturally more in tune with the times. If approved, it will sharpen their focus on the kinds of circumstances that represent inappro-

priate and potentially damaging conflicts for the Board, but relax the current, overdrawn, prohibition.

"The provision as it's now written stands out, in my opinion, as being unrealistic, and worse, a potential impediment for attracting candidates that could have a great deal to offer as leaders of the Cooperative," said WEC Vice President Roger Fox.

Article III, Section 2 (d) prohibits sitting Board members and candidates from being "in any way financially interested in . . . any entity selling electric energy or supplies to the Cooperative."

That rule, Fox said, "was written in an era when (people's financial affairs) were far simpler. Either they had a direct conflict of interest or they didn't. But now the companies that supply our wholesale power, our transformers, switches and other equipment, may themselves be owned by multinational corporations. In this era of retirement accounts and mutual funds, when people frequently don't know where their assets are being invest-

ed on a daily basis, they could have holdings that technically would disqualify them from serving on the Board – even though they had no control over the decisions of the fund managers.

It remains important to identify and prevent consequential conflicts of interest. Rather than barring candidates who are "in any way financially interested in (companies doing business with the Co-op)," Fox said the amended bylaw would bar people with "a direct, material financial interest" in such companies.

"We could just shrug it off and say our bylaws are so obviously unrealistic in this regard that we'll ignore them. But some of us don't feel comfortable cutting that corner. It's something that should be addressed formally, by updating the bylaws."

WEC isn't the only one to recognize this outdated provision. The NRECA (National Rural Electric Cooperative Association – the industry group that represents member-owned electric utilities nationally) has spotted the problem in co-op bylaws around the country and suggested that those co-ops remedy the situation.

### Drawing the distinction

Vermont's state statute on electric cooperatives also weighs in on the conflict-of-interest issue. It prohibits co-op employees from serving on their boards. WEC's bylaws expand on that protection: they disqualify employees, officers and directors of other Vermont electric utilities, and the employees, officers and directors of companies that sell us our power and equipment. (Such people would be WEC members if they live or own businesses in our service territory.)

"We do not intend to compromise our rules against Board members having real and significant conflicts of interest," said Fox.

The bylaws of an organization should provide guidance about what constitutes a consequential conflict of interest for an officer, and what so-called conflicts actually are irrelevant. Washington Electric's Board will attempt to make that distinction in its amendment proposal for the 2002 Annual Membership Meeting.

It will then fall to the members – who rule by the power of the ballot – to judge whether the directors got it right.

the loan and then schedule a vote. Without the support of two-thirds of the voters, the project would have to be dropped.

"This is a safeguard built into the statute to protect electric co-op members in case their leadership wanted to borrow for a pursuit that people didn't really support, or which they considered too risky," said Co-op Vice President Roger Fox, chair of the Board's Members & Markets Committee, which is drafting WEC's 2002 bylaw-amendment proposals.

The bylaw amendment proposals this year would bring WEC into conformance with all the above provisions in the Vermont statute.

**Investing member equity.** It's important to note that the *statute imposes limits on investments that are not essential to the co-ops' basic service.* The total of all the investments our Co-op can make in "other than electric" activities cannot exceed 50 percent of WEC's total equity (the value of the Co-op's assets that we own free and clear). In WEC's case, total equity is currently around \$12 million.

Perhaps more restricting is the provision that *any individual investment exceeding 3 percent of the utility's equity would require approval of two-thirds of the members voting on such a proposal.* For many small rural co-ops like WEC, 3 percent of equity is not an enormous sum of money (at least, in the business world). Directors who wanted to avoid the expense and logistical problems of putting a proposal out to vote would there-

fore have to confine themselves to fairly small-scale projects. Anything more ambitious would – appropriately – need the expressed support of the voters.

**Selling the Co-op** (or selling or leasing a significant portion of its property). Probably the most serious financial decision a co-op can make is to sell out. Small though our Co-op is, it does have \$31 million in assets. One of the most important functions of the bylaws is to protect the members from transactions that endanger their common investment.

Vermont's statute requires approval by *a majority of all the members* for the sale or lease of "all or a substantial portion of the Cooperative's property." That means more than 4,500 WEC members would have to vote in favor of selling the Co-op in order for it to happen.

Our own bylaws set an even more challenging threshold. They require approval of *two-thirds of the membership* – or roughly 6,000 people – before the Co-op can be sold. WEC's typical voter turnout is less than 20 percent of that.

"The Board (of Directors) considers it a near-impossibility that a sellout of Washington Electric Cooperative could be approved under the present provisions," said Vice President Fox. "This fact provides protection against the kind of hostile corporate takeovers we hear about today, and assures that the people in our service territory will maintain democratic control over their electric utility."

It is also true, however, that the bylaw similarly guards against "selling or leasing

a significant portion" of WEC's assets. The phrase "significant portion" is not defined. So even if WEC received an attractive offer for equipment or property that weren't essential to its operations, the Board could not be sure enough of its authority to make the deal.

"It seems prudent to have the bylaws define what 'a significant portion' means," said Fox. "That would be to our advantage, to make such potential agreements

more feasible."

At this writing the 2002 bylaw amendment proposals are still taking shape. By March, further progress will have been made and readers can look for a clear statement of the goals and provisions in that month's *Co-op Currents*.

The precise language of the amendments will appear in the Annual Meeting (April) issue of this publication.

## Notice To Members Concerning The "Energy Efficiency Charge" For 2002

All Vermont electric distribution utility companies, including Washington Electric Co-op, collect an "energy efficiency charge" as a percentage of each ratepayer's bill. The percentage varies with each electric company, and has been set by an Order of the Public Service Board since 1999. The money funds a statewide energy efficiency program called "Efficiency Vermont."

During 2001 Washington Electric Co-op's "energy efficiency charge" was set at 0.49223 percent. This means that for each \$100 on the electric bill, the energy efficiency charge would total 49¢. The rate is now set at 0.801785 percent. This means that for each \$100 on the electric bill, the energy efficiency charge will be 80¢.

WEC's Energy Efficiency Charge is the lowest of all Vermont utilities. For comparison purposes, the charge on a \$100 electric bill would be \$2.10 for Central Vermont Public Service customers, and \$2.08 for Green Mountain Power customers.

The Co-op continues to be the primary provider of efficiency services for our residential members. (For information call WEC at 1-800-932-5245 or check our website at [www.washingtonco-op.com](http://www.washingtonco-op.com)).

Efficiency Vermont provides services to business, farm, and multi-family housing customers, as well as certain additional residential services. For information, contact Efficiency Vermont at 1-800-921-5990 or their website at [www.encyvermont.org](http://www.encyvermont.org).

# WEC CO-OP STORE



**FEATURED PRODUCT**

**Nighthawk Carbon Monoxide (CO) Detector**

Call for details.  
Retail \$61. Member discount price: \$48.15, plus s/h, VT tax.

**MEMBER SKI DISCOUNT**  
**Mad River Glen Co-Op**

Co-op Members ski cheap at Mad River.  
Contact Co-op for details and discount coupon.

**Lighting Products**

Contact the Co-op for high-quality efficient products at member discount prices.

**Home and Appliance Protection Products**

Prevent damage to appliances from storm and other damage.



**Call the Co-op at 800-932-5245  
or visit us on the web at [www.washingtonco-op.com](http://www.washingtonco-op.com)**

## WEC AT WORK NEAR YOU

### West Danville Outage Cut Short

An outage that affected Co-op members served by our **West Danville** substation lasted only about an hour on Thursday afternoon, January 17, because WEC had installed a standby transformer at the station last fall.

"We're not complacent about any power outages, even brief ones, because we know they can cause people problems," said Dan Weston, director of engineering and operations. "But this experience was a payback for the work we did during warmer weather to be prepared for such a situation. If we hadn't had a spare transformer installed and ready to go, we would have been looking at a five-hour outage at least, by the time we had loaded a transformer on a flatbed here at the service center (in East Montpelier), gotten it strapped down, drove it out there, moved it onto the substation and gotten it connected.

"Even worse would have been transporting and installing a transformer at one of our other substations, when it's 10-below zero in the middle of February. In most cases the transformers are too big for us to handle without hiring a crane. In a situation like that you could be looking at a 36-hour outage."

WEC was able to limit everyone's outage time by temporarily feeding some areas from the **South Walden** substation instead. Meanwhile, Senior Field Technician Brent Lilley took a quick trip to **Peacham** to make sure members out there were getting sufficient voltage from faraway South Walden.

In 1999 WEC began a long-range program to purchase and install back-up transformers at all of its substations. They need to be set on a concrete slab and prepared for duty – a full day's work. All but two of WEC's eight substations are now equipped with stand-by transformers.

### Tree brings down GMP transmission line

Co-op members can be inconvenienced not only by power failures on Washington Electric's system, but by problems on transmission lines owned by other companies that feed our distribution network. (In most cases the power supplier is Green Mountain Power Corp.)

Monday, January 21, was a case in point. Shortly after 8 a.m. a tree fell across the 34.5 KV transmission line coming from Morrisville that provides electricity to WEC's **South Walden** substation. When that happens WEC communicates quickly with GMP and provides help locating the problem, if need-



ed. But basically, Co-op members are at the mercy of another utility's response.

This time GMP was able to restore power in about a half-hour.

"It's unfortunate that another utility's problem can in turn affect some 1,200 of our members," said Weston. "In this case, we weren't the only ones knocked out. Other utilities suffered too."

### Reconstruction

Just as a ship at sea is constantly undergoing repainting, WEC lineworkers can always be found reconstructing sections of distribution system – that is, when storm damages and other maintenance projects permit. WEC members in **East Orange** may have noticed our trucks in their vicinity lately. The crews are setting new poles and running new conductor (wire) in the **Fish Pond** area. Next on the agenda is a similar project in **Fayston**, where 1.8 miles of line will be rebuilt.

Reconstruction projects not only provide new and reliable equipment in areas where the current equipment may be getting old and unreliable; in many cases they also give the Co-op a chance to move the power lines closer to the road where they can be serviced more quickly in emergencies.

### Faulty 'cut-outs'

Ten years ago Washington Electric began purchasing a device called a "cut-out" (a fuse and the tube that encases it) from a reputable national supplier, and installing them throughout the system. WEC now has several thousand of these out there on its lines, and the bad news is that many of them are lemons.

"The 1991, 1992, 1993 and 1994-vintage devices are causing problems all over the state," said Weston. "We started noticing it, and tracked the problem for a year. Then we alerted other utilities, and now they're reporting trouble, too."

The only remedy is to replace the cut-outs. WEC will step up this effort soon, beginning in **Tunbridge**.

"I'd like to target the substations and lines that are farthest away from our service center first," Weston explained. "If a cut-out there fails, people will experience the longest outages because of the time it takes for us to get there, locate the problem and fix it. So those distant places have to be our priority. Then we'll work our way from the fringes of the territory back toward the middle. Unfortunately, it's going to take time."

## Members Write

*continued from page 2*

*owned by the State of Vermont. WEC, as the licensee for the hydro station below the dam, operates the control gates, so we were likewise obliged to comply. However, since the search took place on state property, not WEC's, the question of a search warrant was not raised.*

*When we were first informed of the request for a drawdown we told state officials that we would cooperate fully with the order, but that we intended raise the issue of cost separately. We were informed by ANR Secretary Johnstone that the state police would be willing to discuss this matter once we had calculated the dollar value of the lost output. (In December) we sent*

*Public Safety Commissioner Walton a letter requesting compensation in the amount of \$3,714. This calculation was based on the amount of electricity the lost water volume would have generated, multiplied by the average spot market price during the drawdown and refilling period.*

*While this is not a large amount, and would probably not have impact on a future rate case, the question you raise of who should be responsible for this cost is one we raised with the state at the outset. We are hoping the Department of Public Safety will respond favorably to our request. As of the end of January, we are still awaiting a response.*

*Avram Patt*

## Strong Interest Revealed In Board Vacancy

**B**y early February WEC's Board of Directors should include a new face; but in mid-January it remained uncertain whose face that will be.

WEC President Barry Bernstein reported that there had been an encouraging response to the Board's December invitation to members to become candidates for an appointment to fill a Board vacancy. The vacancy occurred in November with the unexpected resignation of Jay O'Rear of Calais. WEC's bylaws require the Board to fill vacancies on an interim basis until the next membership election.

"We had six people who decided to seek the appointment," said Bernstein. "What was especially encouraging was not only that these people wanted to serve, but that they brought impressive skills and abilities."

Five of the six were interviewed at a Board meeting on January 5 while the sixth was scheduled for the January meeting on the 30th of the month.

O'Rear, elected in 2000, was about halfway through his three-year term when

he stepped down for personal reasons. WEC's bylaws spell out a procedure for filling vacancies which assures that, to the maximum degree possible, directors are elected by the membership rather than selected by the Board. Therefore, O'Rear's replacement will serve only until Washington Electric's 63rd Annual Membership Meeting on May 21.

The interim board member can choose to run for election at that time. The winner of the May election will finish out the remainder of O'Rear's original term, which expires in April 2003.

### Plus, the 2002 elections

The election in May of a candidate to finish out O'Rear's term means there will be four Board seats up for election this year instead of the usual three. Members are reminded that they have a right to run for one of those four seats.

As a member-owned "rural electric co-op," WEC is democracy and self-governance practiced on a local level. Only members – customers – of the Co-op can serve. So at our Co-op it is customers who make the policy choices and economic decisions for the utility that provides their power. Only one other electric utility in Vermont, Johnson-based Vermont Electric Cooperative, can make that claim.

There is still time to become a candidate in the 2002 WEC elections. People who are interested doing so must gather the signatures of at least 25 Co-op members on a petition and present it at WEC's headquarters on Route 14 in East Montpelier by Friday, March 22, 2002.

You can call the office for further guidance and information about the petition and election process.

### Bulletin: Haas Appointed To Vacancy

As *Co-op Currents* was going to press, WEC's Board of Directors announced that it had made a decision, following the January 30 Board meeting, on a replacement to fill the vacancy created by Jay O'Rear's resignation. Charles (Bud) Haas, of Bradford, was selected to take O'Rear's place. Haas is a former Board member and treasurer of Washington Electric Cooperative. More on Haas' selection will follow in the next issue of *Co-op Currents*.