

WEC CO-OP CURRENTS

Waste Not, Want Not

WEC Contracts For Power From Landfill Gas

The view from the top is serene. To the northeast a network of two-lane roads, villages, woods and sky stretches for miles, a panorama of picturesque southwestern Connecticut. To the west the vista is limited by neighboring tree-covered hills, while from the south the sturdy poles of a high-voltage transmission line come marching diligently through their wide, cleared corridor. They pass directly below and parade northward into the distant clouds and countryside.

The air is crisp and the wind brisk. It's silent and peaceful at the top, the solitude broken only by a herd of deer (including a handsome eight-pointer) grazing among the wellheads.

Those wellheads – 85 scattered 12-inch pipes protruding from the ground like submarine periscopes, more than six feet tall and topped with valves and meters – are the only indication that this isn't just any natural Connecticut hilltop.

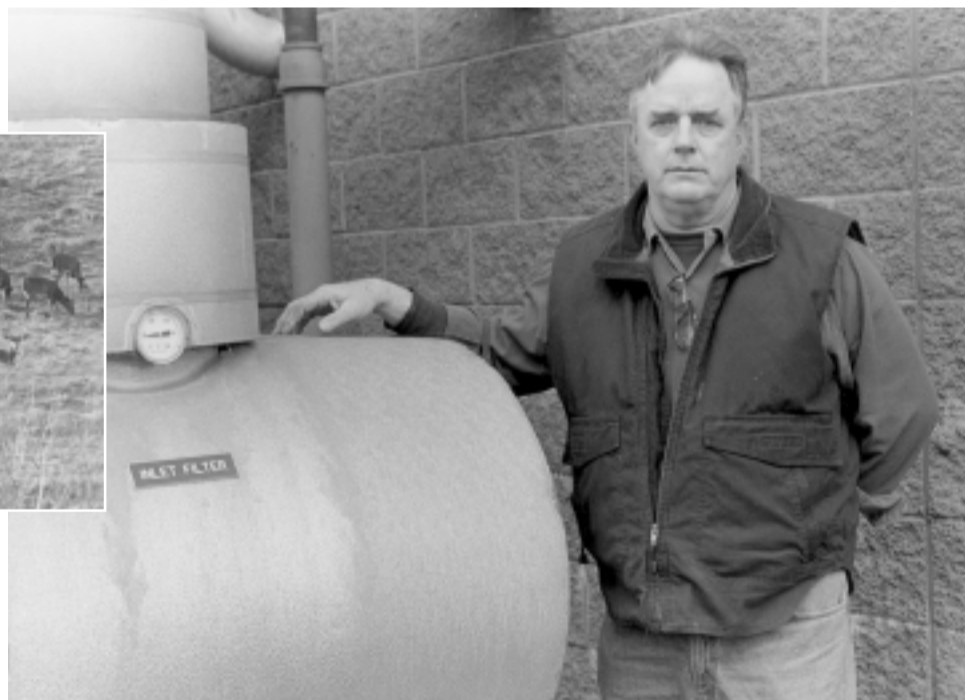
One hundred and seventy feet high, with a 75-acre footprint, it's a manmade

hill constituted of manmade garbage. Below the surface are hundreds of thousands of tons of Hefty bags stuffed with household trash, along with discarded furniture, broken crockery, Mars Bars wrappers, bottles and orange peels (the landfill opened in the 1950s and operated for years before recycling came into vogue), and the countless other items that constitute the American "waste stream."

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The 75-acre landfill in New Milford, Connecticut, provides a scenic view (above), grazing territory for deer and other wildlife (below, left), and methane-generated electrical power for Washington Electric Co-op. Below, right, plant operator Mike Sullivan.



Inside

Methane replaces Vermont Yankee. WEC comes out ahead with cleaner power that is cheaper, too. More on Co-op's conversion on page 6.

Four candidates line up for four seats on WEC Board. This year's slate is introduced on page 4.

A sub for South Walden. Co-op requests voters' support for substation to improve service to 1,400 members. Page 8.



The power station tucked below the landfill is where methane makes electricity.

WEC beset in 2001. Annual outage report confirms what everyone knew. Snowstorms put Co-op lights out repeatedly last winter. Page 3.

Washington Electric Cooperative
East Montpelier, VT 05651

Landfill Gas

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For WEC's purposes, however, the most important component of that giant mound is methane.

Nobody put the methane there. It is contributed by NOMOs. (Red Sox fans take note: NOMO here does not refer to the last Boston pitcher – Hideo Nomo – but to “naturally occurring microorganisms.”)

“Landfill gas is generated at substantially constant rates which change slowly over a period of many years as buried organic material is stabilized,” explains a handout from Waste Management of North America Inc., which owns this New Milford, Connecticut, landfill and other waste disposal, transport and management facilities all over the United States. “The NOMOs reach a stable population throughout the mass of buried organic material, which serves as their home and food. The NOMOs will work, procreate and make gas until no more food is available, perhaps for 30 to 50 years or more. Approximately 4.5 cubic feet of landfill gas will ultimately be generated per pound of municipal solid waste.”

The primary components of landfill gas are methane and carbon dioxide. Methane is a two-edged sword. It can

accumulate to explosive proportions in a covered landfill, so federal law requires operators to collect and remove the gas through pipelines woven through the refuse. But it can also fuel an engine.

At most landfills the methane is “flared” – burned from the end of an open pipe. But at the New Milford facility operators Mike Sullivan and Steve Pruchnik oversee a complex system of compressors and filters in a small brick building at the base of the trash mountain, which refine the methane and channel it to a big engine in a room separated by a glass wall from their monitoring station.

“It’s the same engine as a jet engine,” says Sullivan.

But this one powers a combustion turbine generator; inside the generator a spinning, magnetized wheel activates electrons and – *tah-dah!* – electricity happens.

Power lines connected to the building carry the electricity off to serve the local community. But it is Washington Electric Cooperative, 270 miles away in East Montpelier, Vermont, that is the power plant’s real customer.

WEC signed a three-year power contract this winter with Bio Energy Partners, a joint partnership of Waste Management Inc. and Texas-based Caterpillar Inc., which provides the jet engine. When purchasing electric power, utilities don’t receive the specific electrons they are

buying; rather, the purchase gives Washington Electric access to the electricity – provided by a variety of generators – available on the New England grid, which serves all consumers in the region. Cheaper than the nuclear-generated energy WEC had been buying from Vermont Yankee, the 2.25-megawatt hours (MWh) output of methane-generated electricity from the Connecticut facility ensures that the grid will carry at least that much non-polluting, waste-consuming electric power.

Well, it’s mostly non-polluting.

“Methane is a greenhouse gas,” explains Sullivan, “so you have to at least flare it off. When you run the gas through a generator you reduce CO₂ and carbon monoxide. The nitrous oxide increases somewhat, but overall you get a net reduction of emissions.

“Plus, you get the electricity.”

The plant reduces CO₂ emissions by 23 percent and SO₂ (sulfur dioxide) by 58 percent. Ideally, landfill-methane generation also displaces some of the consumer demand for power from “dirtier” sources: coal, fossil fuels and nuclear reaction.

Fine-tuning

The New Milford landfill opened in the 1950s. Bio Energy Partners installed the gas-recovery power plant in 1991, and the landfill was closed and capped in

1995. The official estimate is that there will be sufficient methane production from those industrious NOMOs to produce WEC’s 2.25 MWh until the contract termi-

nates in December 2004, but Sullivan’s educated guess is that the system might operate for another year or two beyond then. If it does, WEC will have the option of buying power in the fourth year for the same price it will pay in the third year.

At least once a month Sullivan and Pruchnik collect gas samples from a valve at each and every wellhead and analyze the samples through a computerized system in their work station. It’s their window into the anaerobic activity deep within the landfill, albeit a complicated window, with 85 variables (the readings from the individual wells); it enables them to maximize system efficiency by adjusting pressure and vacuum in the wells, and by pumping out liquids if necessary. (Liquids are trucked to a sewage treatment plant.)

Waste Management Inc. built its first landfill gas-to-electricity facility in Wisconsin in 1985. It now has installations in at least 15 other states.

Meanwhile, an untold number of landfills in New England and elsewhere continue to collect their methane as required and flare it off, unused, into the atmosphere.

Waste, wasted again.



Ideally, landfill-methane generation also displaces some of the consumer demand for power from “dirtier” sources: coal, fossil fuels and nuclear reaction.

Co-op Currents

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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
	CHARLES HAAS	4733 South Road, Bradford, Vt. 05033 budh@sover.net	439-5397
	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.

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 issue.

Sane Decisions

Editor, *Co-op Currents*

I appreciate the complexity of issues faced daily by those who establish and guide the policies of WEC, and by those who implement them. And I am especially grateful for your sane, considered, effective decisions, most recently to withdraw from the Vermont Yankee contract.

Plus, *Co-op Currents* is a highly readable and informative sheet. The energy-efficiency charge seems a small price to pay.

Charlotte Durgin
Washington

Attention Plainfield.Bypass Internet Customers

(and all Co-op members using dial up internet service).

The Co-op plans to offer members competitively priced, local dial-up internet service, provided by Vermont Link (<http://www.vtlink.net/>) of Hardwick. Contact the Co-op for details or check our webpage @ <http://www.washingtonelectric.coop>.

Snows Cause Spike In 2001 Outage Report

For many folks the winter of 2000-2001 was a reminder of how things used to be. "Hey, we're finally getting a real Vermont winter!" people hailed each other as the snow piled up in January, February and March with what seemed like a new storm every week.

In terms of snowfall, it certainly was a "real Vermont winter" – one of the snowiest on record.

Unfortunately, the same can be said regarding power outages. WEC recently completed its Annual Power Outage Report for 2001, and the charts and graphs tell a clear story: Co-op members experienced a far greater number of outages last year than the five-year average. And the cause, primarily, was the storms in the first months of 2001.

The annual exercise of reviewing the previous year's outage record helps the Co-op identify system problems – besides the predictable havoc caused by storms – and formulate plans to address them in hopes of preventing future occurrences.

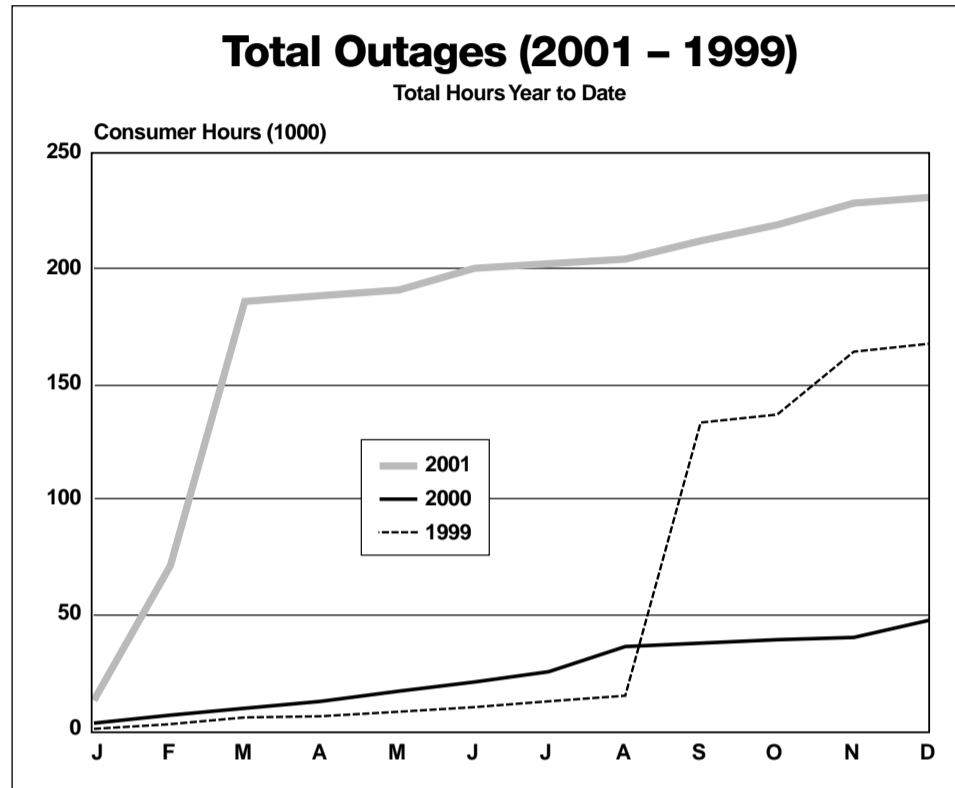
For example, the report reveals that "equipment failure" was the fourth-leading cause of power interruptions in 2001. The South Walden substation, possibly damaged by lightning, malfunctioned twice, knocking out power for a large portion of the membership. But the main equipment culprit, system wide, was the porcelain "cutouts" manufactured by a particular company. WEC and other Vermont utilities have installed thousands of these fuse mechanisms on their power lines. One lesson from the 2001 Annual Outage Report was that the Co-op must step up its effort to replace these faulty devices.

The report did reveal some good news. Except for storm-related outages (granted, that's a big "except"), the average length of time that WEC members go without power during an outage continues to decrease. Power is restored more quickly when it does go out – the average outage duration dropping 37 percent below the five-year average last year.

But the fact remains: WEC got hit hard in 2001, and people lost power, far more than in recent years.

By the numbers

The graph titled Total Outages 1999-2001 (above) tells the story plainly. The lines that represent outages in 1999 and 2000 putter along for the first eight months of the year showing only a small accumulation of outages on WEC's system. (Note that in 1999 the line soars upward in September; that's Tropical Storm Floyd.) For 2001, however, the outage line takes off like a Roman candle



in January and continues on the same trajectory through March.

Engineering and Operations Director Dan Weston described it in a recent report to the Board of Directors.

"In the first quarter of 2001, WEC experienced 706 separate outages, or 57 percent of the year's total," Weston wrote. "(The outages) were due almost exclusively to the continual effects of snow loading brought about by no less than six consecutive snow storms. The total consumer-hours out for this same period of time ("consumer-

hours" includes all WEC-member outage times) accounts for 75 percent (of the year's total). The average number of consumer hours out over the previous five years was 42,725 hours, while there

were 230,544 hours in 2001."

Then there was this: "The total number of hours out, exclusive of the first-quarter storms, was

58,062."

Even those 58,062 consumer-hours during the rest of the year seem like a lot. Weston explained that many of those hours could also be traced to the winter.



The constant burden of heavy snow pulled power lines, guy wires, poles and cross arms out of whack, so in better weather "WEC implemented a stepped-up maintenance program aimed at (tightening) conductors, straightening poles, changing wire and removing storm-damaged trees. Although this effort prevented (future) outages... it also caused a significant increase in the number of company-initiated outages, which was the third-leading cause in 2001." (The first two leading causes both were related to storms.)

Location, location, location

To a great extent, the Co-op's problems in 2001 were a result of luck: bad luck.

The infamous January Ice Storm of 1998 caused widespread havoc in New England and Quebec. Utility systems in Franklin and Chittenden counties were demolished, Hydro Quebec was unable to supply power to Vermont's utilities, and the damage to trees was visible for years after that storm.

WEC, however, was hardly touched. Co-op members in limited areas experienced repeated problems from broken trees and wires, particularly in the Orange Heights region. But the Ice Storm largely bypassed Co-op Country.

Last winter the reverse was true. The storms were relentless in WEC's service territory. High altitude, "snowbelt" regions were especially hard-hit. WEC members in Tunbridge, Washington and Orange really had a tough time.

As did Washington Electric's line crews, who strapped on their snowshoes and put in more overtime hours with these repeated storms than they usually do in more isolated and obvious weather emergencies, like the Ice Storm or Tropical Storm Floyd. WEC's office staff, too, manned the phone lines days, nights and weekends as members called in to report outages, and storm-response teams plotted the damage patterns using new automated equipment. Dispatchers coordinated the crews' activities hour after hour by cell phone and two-way radio.

Washington Electric's members took it on the chin last year. Our crews are finding problems and fixing them faster, and the operations staff works continuously to upgrade equipment and improve reliability. But 2001 was a reminder that "real Vermont winters" have real Vermont consequences.

Four Board Seats Up For Election This Year

Four Candidates, Too

In most years the members of Washington Electric Cooperative pool their ballots to elect three candidates to serve on WEC's Board of Directors. This process annually provides the membership an opportunity to elect fully a third of the body that makes policy and leadership decisions for the consumer-owned utility and works closely with its general manager.

This year things are slightly different. Four positions, out of the nine that constitute the entire Board, are up for election. In addition to the three seats that normally expire at the time of the Annual Meeting (which will be held on Tuesday, May 21, this year), the members will fill a fourth

seat as the result of the resignation by Director Jay O'Rear in November 2001.

Following procedures set forth in the Co-op's bylaws, the Board invited members to apply to fill that vacancy on an interim basis, and eventually appointed **Charles (Bud) Haas** to replace O'Rear temporarily. Yet the bylaws assure that, to the maximum degree possible, directors are elected by the membership rather than appointed by the Board. This means that Haas must now stand for election. No other candidates came forward to vie for the interim seat (or for the expiring Board seats). The candidate who places fourth in the voting will be considered the replacement for former Director O'Rear,

and will finish out the remaining year of his term, which expires in April 2003.

This year concludes the terms of Directors **Wendell Cilley** of West Topsham, **Donald Douglas** of East Orange, and **Richard Rubin** of Plainfield. All three incumbents are offering their services for another three years. WEC's Committee on Candidates has ascertained that all of the candidates meet the qualifications for running and serving on the Board, by the criteria set forth in our bylaws. However, voters can write in the names of other Co-op members who are not official candidates.

The election of Directors is performed by ballots sent to each Washington Electric Cooperative member by mail in the weeks prior to the Annual Meeting. Be sure to read the election materials carefully to determine when the deadline is for posting your votes by mail.

Members can also vote at the Annual Meeting, instead of by mail. In fact, they are encouraged to attend the meeting, as an enjoyable social event and as an inter-

esting and informative way to be involved with the utility that they, the consumers, own. A schedule of events for the Annual Meeting, and a coupon for the dinner, will appear in the next issue of *Co-op Currents*.

Printed below are brief biological sketches submitted by the four candidates, which contain information on each person's background and involvement with WEC or other avenues of community service. Voters will have another chance to hear from the four official candidates. The next issue of this publication – which will be the last one before the election and the May 21 Annual Meeting – will feature their responses to a series of questions about issues related to Board service. It will provide readers a better sense of the interests and viewpoints of the four members who are offering to serve the rest of us by working on the Board.

Report Of The 2002 Committee On Candidates

The 2002 Committee on Candidates convened a teleconference on Tuesday, March 26, at 7:00 p.m. to review the petitions and qualifications of those members who have submitted their names as candidates for the Board of Directors. This year, four (4) members of the Washington Electric Cooperative, Inc. submitted their names as candidates for the four (4) Board positions to be filled. Three positions are for a term of

three (3) years and one position is for a term of one year, as this completes the unexpired term of a former Board member who resigned. The Committee on Candidates hereby affirms:

- that each candidate submitted a valid petition in accordance with Article III, Section 3A of the Bylaws;
- that each has signed a statement of affirmation indicating that they:
 1. have been a member of the Co-op in good standing for at least six months;
 2. do not have a conflict of interest as defined in Article III, Section 2 of the Bylaws; and
 3. have received and understand the responsibilities and time commitments required of a director.

Therefore, the Committee determines all of the candidates to be qualified for the position of director in accordance with the Cooperative's Bylaws, and hereby presents the following official listing of candidates for the Washington Electric Cooperative 2002 election of Directors:

Wendell Cilley	Charles Haas
Donald Douglas	Richard Rubin

The Committee also endorses the voting process established by the Board of Directors, which is designed so that

the three candidates who receive the most votes will serve for three-year terms, and the candidate who places fourth will serve for the one-year term.

2002 Committee on Candidates:

John Bellefeuille*
Michael Duane
Gene Parent
Joseph Bongiovanni
Ben Huffman*
Yvette Tomlinson
Betty Crowell

*did not participate in teleconference

Wendell Cilley



Residence: I was born in Barre and grew up in Topsham, Orange and Corinth. I attended Cookeville Elementary School in Corinth and moved to West Topsham to attend Spaulding High

School in Barre. I currently live in West Topsham with my wife, Lesley, and our son, Ben. Our daughter, Flora, is a junior at St. Michael's College in Winooski.

Education/Profession: After serving a two-year enlistment in the United States Marine Corps I obtained a Bachelor of Science degree from the University of Vermont. I lived and traveled in Australia and New Zealand for four years, and returned to work in Bradford for Orange County Mental Health. I am currently employed as a case manager at Upper Valley Services, and help to organize,

establish and monitor supports to individuals and their teams.

WEC: I have been a Washington Electric Cooperative member for 20 years and have lived most of my life in member households. I continue to believe that Washington Electric Cooperative can provide reliable and affordable energy services while working to improve the quality of life in the WEC community.

Donald Douglas



Residence: I live in East Orange with my wife, Fran, and our youngest son, Jon. We have two children away at college. We bought our house in East Orange in 1981. I can be reached at

439-5364. My mailing address is 21 Douglas Rd, East Orange, VT 05086. I would be happy to talk with any member about the Co-op.

Education/Profession: I am employed by the U.S. Postal Service. I have been a rural letter carrier for the past 18 years. I also serve as an assistant state steward for the Rural Carriers' Association. Before joining the Postal Service I worked in a wide variety of jobs, ranging from running a scanning electron microscope to teaching high school, working with special-needs children, and farming. I have a BA in history from Washington University and an MA from the University of Texas.

Community Service/WEC: I have been an active member in my community since moving here in 1981. For several years I was involved with the Central Vermont Refugee Assistance program. I was also an active member of the Vermont State Soccer Officials' Association. For 14 years I was a volunteer fireman with the Tri-Village Department. I was vice-president of the Board of Trustees for the Orange County Court Diversion program. Because of the time requirements necessary to serve on the Co-op board, my involvement with other organi-

zations has been nearly eliminated.

I have been on the board of Washington Electric Cooperative for four years now. The past two years I have served as treasurer, focusing on the Co-op's finances. As a board member I am also interested in power contracts, reliability, relations with the members, promoting the idea of co-ops, and communicating our interests to the Legislature. I would like to be re-elected to a seat on the board.

Charles (Bud) Haas

Residence: I have lived on South Road in Bradford since 1972, and have been a Co-op member since 1971. My membership is listed in the Town of Bradford. I can be reached by phone at home (439-5397) or by mail at 4733 South Road, Bradford, Vermont 05033.

Education/Profession: I graduated from the US Coast Guard Academy in 1963, received a Master's Degree in Management from the Naval



Postgraduate School, Monterey, in 1969, and received a Certificate in Paralegal Studies from Woodbury College in 1980. Currently I am employed as a clerk for the Orange East

Supervisory Union, having sold my business of 19 years, the South End Market in Bradford.

Community Service/WEC: Over the past 30 years I have served Bradford as a town auditor, as a trustee of the Bradford Academy and Graded School District, as a justice of the peace, as a charter member of the Bradford Community Development Corporation, and as a literacy tutor for Central

Vermont Adult Basic Ed. Currently I am a trustee of the Bradford Public Library, and the secretary of the Board of Directors of the Vermont Bicycle and Pedestrian Coalition, an advocacy organization.

Except for a brief period while traveling in 2001, I have been a Washington Electric Cooperative member since September 1971. In 1992 and 1995 I was elected to the Board of the Cooperative, serving as treasurer for two years, and as chair of the Members and Markets Committee for one year. I did not stand for re-election to the Co-op Board four years ago, as I was in the process of selling my business and wanted to take some time away traveling. In February of this year, the Board of Directors of the Co-op appointed me to complete the term of a resigned director. Now, with current part-time employment, I am able to participate fully in the responsibilities of a

director of the Coop. I would like to continue to serve as a Board member of the Washington Electric Cooperative.

Richard I. Rubin

Residence: I have lived in Plainfield for 30 years. I am married to Jayne Israel and have three children: Sam, Nicko and Amanda.

Education/Profession: I was born and raised in the Boston area, attended Harvard College and then the University of Pennsylvania Law School. After graduating law school in 1970 I practiced law in Boston, representing low-income clients for two years before moving to Vermont.

I have practiced law in central Vermont since 1972, and for many years our law firm – Rubin, Kidney, Myer & DeWolfe –



has had offices in downtown Barre. My practice has involved representing all kinds of people with a variety of problems and issues. Primarily, I am a trial lawyer.

Community

Service/WEC: I am completing my first three-year term as a WEC director. I was a member of the Twinfield School Board for five years, and I am currently a director of Vermont Legal Aid and the Vermont Trail Lawyers Association. Many years ago I was involved with my brother, Mathew Rubin, in creating the Wrightsville hydroelectric facility and the Winooski 8 hydroelectric plant in East Montpelier.

2002 Bylaw Changes Would Complete Last Year's Work

Amendments Address Mortgage Loans, Conflicts Of Interest

Around the end of April Washington Electric Cooperative's members will receive ballots in the mail along with their pre-Annual Meeting issue of *Co-op Currents*. The ballots can be filled out and returned by mail, or members can vote when they attend the Co-op's 63rd Annual Meeting on May 21.

At issue are the candidacies of four members seeking election to WEC's Board of Directors (see page four of this issue). Equally important, the ballots this year will contain proposed changes to the cooperative's bylaws. The bylaws, along with state statute, set out the rules for running the consumer-owned electric utility, and they establish, define and protect the members' authority and rights in the cooperative.

The amendments being proposed this year fall into two categories:

- clarifying when the Board of Directors must submit potential financial transactions to the membership for a vote;
- defining conflicts of interest for Board members.

These subjects were discussed at greater length in the January-February issue of *Co-op Currents*, but this article presents an update following the Board's March 6 meeting, at which the directors reached their final decisions on the proposals to amend the bylaws. The precise language of the proposed changes will appear in full in the next issue, accompanying your ballots.

When members' approval kicks in

The financial matters are addressed in Article IX, which governs "Disposition of Property." At issue is the question of which transactions the Board of Directors is authorized to conclude on its own and which potential transactions would require a vote of the membership. These financing considerations come under "disposition of property" because they deal with loans significant enough that the lending institutions would take a mortgage lien on WEC's assets.

Members are urged to bear in mind that the amendments the Board is proposing were drafted in response to changes in the Vermont law that governs electric co-ops. The Legislature amended the state statute in 2000 to give electric co-ops greater financing flexibility in some respects, and to enable them to branch out into certain other services for their members that investor-owned utilities have always been permitted to do. For co-ops, the law continues to require that any such new member services remain connected to the fields of energy, electricity and communications. The bylaw proposals set forth this year are designed to bring WEC into compliance with the revised statute.

It's also important to remember that our Co-op began this process last year. In 2001 the Board proposed the first set of bylaw changes for the purpose of conforming to the statute, and the members supported them decisively by a vote of 913-69. This second stage should conclude that process.

In its rewritten form, Section I of Article IX reiterates what Vermont's statute already makes clear: that WEC's Board of Directors "shall have full power and authority, without authorization by the members of the Cooperative," to take a mortgage loan for projects and activities related to "the ordinary course of the Cooperative's electric business." In order to maintain and improve their service infrastructure, Co-ops borrow money from the federal Rural Utilities Service regularly.

However, "to mortgage... any or all of the property of the Cooperative for purposes authorized by statute *other than the operation of the Cooperative's electric business*" (emphasis added), the Board would need to hold a membership vote and win the approval of two-thirds of the people who voted.

Section 2 of Article IX also is rewritten under the new proposals. It simply says that "Investment of member equity in business activities (that are permitted to electric co-ops), other than electric activities, shall be as permitted by statute."

So what does the statute do?

It imposes limits on investments that are not essential to the Co-op's basic service, which is supplying electric power to rural consumers. In total, investments in "other than electric" activities must not exceed 50 percent of the Cooperative's equity. (Currently, WEC's total equity stands at around \$12 million.) Perhaps even more restrictive is that no individual project – referring, again, to projects outside the scope of providing electricity – could exceed an investment of more than 3 percent of the Co-op's equity unless the Board called a vote and won the backing

of at least two-thirds of the members who participated.

Essentially, that provision limits our Co-op to fairly small-scale projects (referring, again, to "other than electric service" projects), unless the Board believed a more-expensive project would be important enough to put to a full membership vote.

The amendments proposed this year simply enter these state restrictions into our own bylaws.

Finally, under Article IX, amendments to Section 3 address the issue of selling the Co-op entirely, or selling a "substantial portion" of its assets and property. As the bylaws stand, they do not differentiate between selling "all" or a "substantial portion" of WEC's property, nor do they make it clear what a "substantial portion" is.

For actually selling our Co-op – a company valued at around \$31 million in assets, which the members own together – the proposal raises the requirement from "a majority of the members... voting on the question at a meeting" to "two-thirds of *all* the members of the Cooperative." With some 9,000 members, that amounts to some 6,000 voters. Here, WEC's proposed bylaw amendment exceeds the requirement of the state, which is that the sellout of an electric co-op needs the support only of a majority of all members.

The amendments set the same requirement for selling "a substantial portion" of the Co-op's property, but for the first time they also define what that phrase would mean: "A substantial portion shall be considered to be a portion which would substantially diminish the ability of the cooperative to accomplish its core function as an electric distribution utility."

Conflicts that matter

The other bylaw amendment proposal set forth this year alters the language in Article III, Section 2 (d), pertaining to

continued on page 8

Co-op Trades Nuclear Power For Methane

A 'Plus' For Costs And The Environment



Waste Management, Inc.'s landfill in New Milford, Connecticut; the newest addition to WEC's power portfolio.

is flared off (burned at the end of an open pipe). But at the landfill in New Milford, Connecticut, which is owned by a national company called Waste Management Inc., the methane is processed and refined to fuel a large internal-combustion turbine, which in turn powers an electric generator. The generator puts out 2.5 megawatts (MW) of electricity, on average, throughout the year.

New Milford lies some 270 miles southwest of central Vermont. It's true, therefore, that the methane-activated electrons from the 75-acre landfill are not conveyed by transmission lines directly to our Co-op. But the way the New England power grid is organized is that utilities contract with the generators of their choice and are given credit to withdraw from the grid the amount of electricity they have purchased.

WEC's new Connecticut contract guarantees at least 2.25 MW of greenery in the regional grid.

Cost savings in renewables

Swapping nuclear power for methane was not just a feel-good maneuver for Washington Electric Cooperative. There were very practical objectives in mind. WEC's 9,000-plus members are now spending less for wholesale electricity than they were paying for nuclear power from Vermont Yankee. Boston-based LaCapra Associates, WEC's power-supply agent and adviser, projected Vermont Yankee's wholesale charges in 2002 to average around \$52.40 per megawatt hour (MWh). Power generated for WEC at the New Milford landfill will cost around \$35.50/MWh.

"We expect that this replacement

In January a significant event occurred in the history of Washington Electric Cooperative: The Co-op ceased buying power produced by a technology that creates radioactive wastes that will ultimately be stuffed into the ground somewhere (Texas?, Nevada?) and remain lethal for thousands of years. To replace that power in its electricity "portfolio," WEC contracted with a company that does almost exactly the opposite: It generates electric power from buried organic wastes — alleviating, rather than

contributing to, environmental stress.

Gone from Washington Electric's portfolio is nuclear-generated power from the Vermont Yankee plant in Vernon. WEC (along with three other utilities) negotiated an agreement that enabled the Co-op to sell its limited shares of Vermont Yankee and terminate its power-purchasing contract. That contract was due to expire next November anyway, but the agreement moved forward by nine months a moment WEC's Board of Directors had been waiting for: the day

when our Co-op could wash its hands of costly nuclear power and its deadly byproducts.

As WEC stepped away from nuclear generation, it bought into landfill gas electric generation. A main component of landfill gas is methane, which is produced naturally as microorganisms break down organic wastes. Methane can reach explosive levels in a landfill, so federal regulations require operators to collect the gas through wells bored into the landfill mound. Most often, the captured gas

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source, coupled with (limited purchases from the electricity 'spot' market), will save WEC at least \$330,000 (in 2002) if WEC is able to terminate Vermont Yankee early," LaCapra said in a report last fall to the Co-op.

Now that the Co-op has done so, those savings may well be realized.

"By taking on this contract we were able to fulfill two of our goals," said Board President Barry Bernstein. "We replaced some 2.25 megawatts of Yankee nuclear power with power from a renewable resource that's environmentally friendly and as close to home as possible; and we did it at a price that was lower than Yankee's and competitive with the wholesale market.

"Our members know that it has been a goal of the Co-op to move further toward renewable resources for our power, consistent with affordable costs," he continued. "But it became even more evident after September 11 that we have to find ways in this country to reduce our dependency on fossil fuels, particularly fuels that are coming from far away.

"At the same time, the Board has a financial responsibility to our members, and we were not prepared to pay exorbitant prices for renewables. But we're finding that we don't have to. There is the potential for getting into projects in New England that can compete on a relatively even playing field with fossil fuels."

"Renewables are relatively more economic here in the Northeast," confirmed Stan Faryniarz, an energy economist at LaCapra (and a Vermont resident) who works closely with Washington Electric Co-op.

While people sometimes assume that New England's climate and terrain work against green technologies like wind and solar generation, in other parts of the country cheap coal and giant, federally subsidized hydro projects present competitive obstacles to alternative generation. Maine, Connecticut and Massachusetts, on the other hand, will soon require utilities to carry certain percentages of green energy in their power portfolios, and have made money available to help develop renewable resources. Add these to the environmental ethic found in this region, and New England is far from a wasteland for alternative energy.

'Dream project'

It was Faryniarz who found the New Milford methane-generation facility, which had recently lost a customer at the conclusion of its power contract. Faryniarz helped WEC launch negotiations with Bio Energy Partners, the partnership of Waste Management Inc. and Caterpillar Inc. – the Texas-based heavy equipment manufacturer – that owns the methane plant (see "Waste Not, Want Not," page one). WEC had been anticipating the November 2002 termination of its Vermont Yankee contract for some time, and asked LaCapra Associates to look for sources of replacement power.

"Since Yankee represented 30-to-35 percent of WEC's total energy supply, this was a big deal," said Faryniarz.

But WEC had certain criteria in mind. The Co-op wanted clean and affordable energy; equally important was price stability.

Natural gas is the cleanest-burning fossil fuel, and is becoming abundantly available in the Northeast. But economically stable? No way.

"Around the end of 2000 natural gas prices went from \$3 per million-BTU to about \$10 per million-BTU," Faryniarz said. "The Co-op was not necessarily turned off by the emissions profile of natural gas, but the volatility in pricing made them focus more on renewable options."

New Milford, Faryniarz said, was "a dream project, for our purposes." The partnership needed a customer, and could offer competitive prices because the facility had been in operation since 1991 and its capital costs were largely retired.

What's more, Faryniarz said, methane generation was the perfect replacement for Yankee power.

"Landfill methane is a baseload-type resource – not weather-dependent, highly available day after day, at all times of the year. That's precisely what Yankee provides. We needed something to fill that niche. Landfill methane fit the bill."

WEC as green as they come

Finally, there is another way in which WEC's replacement of nuclear power with landfill gas is momentous: It has put WEC in the vanguard of electric utilities that supply their customers with a high percentage of power from renewable sources. New Milford brings WEC's power portfolio to around 40 percent renewable – which may be the highest percentage of any American utility, and was significant enough to spark the interest of the National Rural Electric Cooperative Association (NRECA), which will publish a story about our Co-op in an upcoming issue of its nationwide magazine.

"Vermont Yankee represented a third of our power," explained WEC General Manager Avram Patt, "and the landfill methane is replacing 73 percent of Vermont Yankee. The independent power producers – small-scale Vermont hydro facilities, plus a private wood-chip plant in Ryegate – represent 5 percent of our supply, as they do for all utilities under state law. Another 5 percent comes from the McNeil wood chip plant operated by the Burlington Electric Department.

"Plus, in a good year, we get 5 percent of our power from our own hydro facility at the Wrightsville Dam. When you total those renewable sources, it comes to 40 percent of our power."

To which Board President Bernstein adds: "Avram says 40 percent because Hydro Quebec does not fall under accepted definitions of a renewable energy source, due to its environmental impact in Canada. Still, if you factor in our Hydro Quebec contract, about 85 percent

of our power is non-fossil fuel. Thirteen percent or so comes from the spot market, where we don't control the sources; most of that is natural gas, though there is some oil and nuclear generation in New England."

A 'bridge'

WEC's new contract for methane-generated power runs only until December 31, 2004, as the facility is nearing the end of its lifecycle (though the contract can be extended if the resource remains available).

Still, the Co-op sees its renewable-power options expanding rather than shrinking. Patt, Bernstein and Faryniarz refer to the New Milford contract as a "bridge" to a promising future in which WEC could increase its renewable-energy profile to well above 40 percent.

For one thing, Washington Electric received a \$1 million federal grant last fall, with the assistance of U.S. Rep. Bernard Sanders, to put toward a new wind-electric project somewhere in Vermont. Besides that, WEC is finding

that developers of other renewable-energy projects are looking for customers and/or partners with precisely what WEC has to offer: a long-term market for their power, and access to low-cost federal funds through WEC's primary lender, the Rural Utilities Service. Under the right circumstances WEC would consider taking an ownership position in a renewable-energy project.

"One of the features of renewables is that the fuel source itself is relatively cheap, but the expense of equipment and getting the project operational represent a high portion of start-up costs," said Faryniarz. "The Co-op could help bring the economics of renewables into the range of competitiveness."

That would benefit the entire region, not just Washington Electric.

"What we really hope to do is to get off nuclear and fossil-fuel power supply entirely over the next decade, as long as we can do it competitively," said Bernstein. "The proof will be in the final pudding. But this has been a very encouraging step."

Co-ops Get A Domain Of Their Own

On The Web, It's .coop Now

You can have your dot-coms, your dot-orgs and your dot-edus. Who needs them? Cooperatives the world over have their own TLD now.

TLD stands for top-level domain, and it's the suffix at the end of an Internet address that (somewhat) identifies what kind of an entity an entity is. The National Cooperative Business Association, a trade association representing cooperatives of all kinds, had long thought that co-ops were miscast under the dot-com designation. So in September 2000 the NCBA approached the Internet Corporation for Assigned Names and Numbers (honest, there is such an organization), and proposed the introduction of a new TLD just for co-ops.

It would have numerous advantages, not the least of which is that dot-com is getting crowded. But more to the NCBA's point, cooperatives are a distinct form of business enterprise founded on a belief system that promotes equality, fairness, honesty, community and – most of all – cooperation.

NCBA argued that cooperative enterprises should be identified as such. Its claim attracted some influential allies. The United Nations (whose workers have their own credit union, a form of co-op) and the European

Union joined the pitch to the ICANN.

These organizations, backed by legions of co-ops seeking their unique Internet identity, won the day. At 5 p.m. Greenwich Mean Time on January 30, 2002, registration within the new .coop TLD opened to all cooperatives worldwide.

It didn't take WEC long to join. Washington Electric Cooperative shed its .com designation in February. As a result, WEC's web page is no longer found at www.washingtoncoop.com. The new address is www.washingtonelectric.coop. The change also affects WEC staff members' email addresses. Note, for example, that General Manager Avram Patt can now be reached at Avram@Washingtonelectric.coop.

"It's good for the cooperative movement that co-ops are now recognized as a different kind of business from dot-coms," said Patt. "The address will remind people of what we stand for. And it links cooperatives everywhere. Dot-coop is who we are."

Already, more than 5,000 .coop names have been registered by cooperatives in more than 30 countries. Worldwide, 750,000 cooperatives provide service to an estimated 760 million members. WEC's membership accounts for some 9,000 of them.

A Sub For South Walden

Though Neutral On Rates, Project Needs Members' Approval

At Washington Electric Co-op's Annual Membership Meeting in May of 2000, the voters approved the construction of a new substation in Moretown to serve some 1,250 homes, farms, schools, public facilities and businesses in the towns around the Mad River Valley.

"We were very gratified to see, from the overwhelming support that project received (the vote was 1,128-168), that people understand we need to do these construction projects from time to time for the benefit of the entire electric system," said WEC General Manager Avram Patt.

Fast-forward two years. WEC's own line crews and operations staff finished the new, modern substation in Moretown and brought it on line last June, and the Co-op's leadership is now hoping for similar member support for the next step: replacing the aged, inadequate substation in South Walden.

There is a price tag to these construction projects, but it's a cost members do not feel in their rates. WEC arranges financing for its major construction and renovation projects in the context of cyclical, four-year work plans that are funded through low-interest loans from the federal Rural Utilities Service (state regulators also review and sign off on the financial aspects of the proposals). Payments on the work plans, plus calculating the economic benefits that result from upgrading WEC's equipment, are figured into the Co-op's annual budget-making process.

The South Walden project was included in the 2000 work plan, with its federally subsidized, 35-year loan. Since WEC is already making payments on that loan the project will not cause a rate increase for the Co-op's membership.

What it will do, said Engineering and Operations Director Dan Weston, is immediately improve electrical service to those members who are served by the South Walden station; plus, the new substation will be better able to provide back-up power for members connected to WEC's West Danville sub.

"All in all, it's going to improve service to about 1,400 people, directly and indirectly," Weston said.

That number includes Co-op members in South Walden, Cabot, Wheelock, Stannard, West Danville, Woodbury and parts of East Calais. The construction project also represents the first phase of more comprehensive system improvements for Greensboro.

"Our other goal, besides obtaining efficiency improvements and enhancing our capacity for growth, is to improve safety

for our staff," Weston said.

Maintaining and repairing an electric-distribution system is inherently dangerous work. That's one reason (cost-containment is another) that WEC has begun using its own personnel for replacing its subs – a long-term objective that will

eventually include most of WEC's eight substations. The design work is performed by the engineering firm of Dufresne & Henry, and WEC contracts with local construction companies for site preparation. After that, however, WEC's staff takes over.

"Performing the construction enables our crews to build the facilities to their own liking, and familiarizes people with the equipment they'll be working on, sometimes under very trying conditions in storms and winter weather," said Weston.

Ideal location

WEC's South Walden sub sits just off the Cabot-South Walden Road, a stone's throw from the intersection with Route 15. The new substation will be built about 500 feet from the current site, thanks to Co-op members Donald and Janet Cochran, who made the land available to Washington Electric at a very affordable price.

"They went out of their way to accommodate our needs," said Weston. "It was just a plain, nice thing to do. I sincerely want to express our appreciation."

The proposed site sits in a small clearing that is naturally screened from the

road by a stand of trees, further reducing WEC's preparation work and aiding the approval of the project by local and state regulators. Utility construction projects are reviewed under Act 248 and must receive approval for a "Certificate of Public Good." A public hearing on the

project was held in Hardwick on March 19, and the Co-op expects to have its certificate in hand well prior to the membership vote on Tuesday, May 21.

Speaking in true "Vermontglish" (English with a Green Mountain

flavor), Weston described the site as bordering "an old thrown-up road" in the woods; it's also close to the remnants of the historic Bayley-Hazen Road. The site presents the additional advantage of enabling WEC to remove several sections of transmission line that run along the highway. Those lines will be diverted through the trees – an aesthetic improvement.

"As for the land and what we have to do to achieve minimal impact, it couldn't be better," Weston said.

Membership say-so

So, with financing in place and regulatory approvals lined up, why is WEC asking members for their support in the ballots provided for the 2002 Annual Meeting?

The answer lies in Vermont's statutes that govern cooperative and municipal electric utilities. Those laws call for a vote before such projects can go forward.

"All in all, it's going to improve service to about 1,400 people, directly and indirectly," Weston said.

"The intent," said General Manager Patt, "is to ensure that co-ops obtain their members' approval if the utility wants to build a large new facility that could have significant financial consequences for the members. This facility is not so large, and it simply replaces an existing substation. Financial consequences will be minimal because the financing is in place, we were able to obtain the land very reasonably, and we'll save on construction costs by performing the work ourselves.

"Nevertheless," he continued, "the law does apply. We need our members' approval. While that requirement creates an additional obligation for us, voting gives people an opportunity to be informed and consulted about the development of their co-op. That's an advantage that members of an electric cooperative, myself included, have over folks who buy their power from investor-owned utilities."

People with questions about the substation construction project are invited to contact WEC board members (whose phone numbers and addresses are listed on page 2), General Manager Avram Patt, and Engineering and Operations Director Dan Weston.

Bylaws

continued from page 5

conflicts of interest for Board members. Currently, the provision states that "No person shall be eligible to become a Director... who... is in any way financially interested in... any entity selling electric energy or supplies to the Cooperative." The proposal changes that language to prohibit anyone who "has a direct, material interest in" such an entity (an equipment supplier, for example, or an electricity wholesaler).

The reason for this proposed change is that the current language, taken literally, would disqualify otherwise eligible members whose mutual funds, or retirement funds, for example, included stock in some national or international company associated with electric utilities. The Board drafted this proposal reasoning that in the modern financial world people frequently don't have personal control over every stock or bond in their portfolios; nor do they always know where those funds are being invested. The Board concluded that WEC could potentially lose the volunteer, leadership services of members with much to offer if the current bylaw were enforced literally.

It seemed wiser to amend it, with today's realities in mind.

Co-op Currents will publish these bylaw sections, with the old language and the proposed new language, in the next issue. Anyone with questions is invited to call the members of the Board of Directors, or WEC General Manager Avram Patt.



WEC's South Walden substation on the Cabot Road would soon be replaced by an up-to-date facility, with the approval of the voters at the Co-op's annual meeting.