



## CEO Feuerberg Addresses Virginia Legislative Panel



At the request of Senator John Watkins, a member of the Virginia General Assembly’s Commission on Electric Utility Restructuring (CEUR), NOVEC CEO Stan Feuerberg testified before the Commission in December 2004. He was asked to provide the CEUR with a detailed financial and operating report for NOVEC under Virginia’s capped rates. (You may remember that the General Assembly voted in 2004 to extend rate caps until 2010.) One local legislator, Delegate Harry Parrish (R - House District 50), serves on the Commission.

It was a compelling story that Feuerberg related to the panel. He assured them that NOVEC is preparing for competition in a responsible fashion, not squandering the margins earned during the rate-cap period. In evidence, he emphasized that NOVEC has not raised its distribution rates in more than 14 years, has returned more than \$131 million to its members over the past 10 years (\$31 million in 2004 alone) and completed nearly \$30 million in new construction during the most recent 12-month period – all without borrowing a dime. In addition to sharing information about the fiscal strength of NOVEC, Feuerberg pointed with obvious pride to NOVEC’s top-in-the-region reliability record – greater than 99.987 percent.

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In fact, the NOVEC story as told by Feuerberg was so compelling that there were few questions from the legislators who comprise the panel. Senator Watkins did ask about taxes paid by NOVEC. In addition to payroll and state sales taxes, Feuerberg noted that the Cooperative pays the third-largest amount of real estate taxes in Prince William County and is also one of the top real estate tax payers in Fairfax County.

Feuerberg also stressed other NOVEC 2004 accomplishments to the legislators:

- Two new substations were commissioned.
- More than 70 miles of new line were constructed.
- A new customer information system (CIS) was installed to improve customer service.
- 300 workers were gainfully employed, with competitive wages, salaries and benefits.
- NOVEC’s subsidiary businesses in natural gas marketing, fiber-optic telecommunications as well as water-heater and standby-generator sales all grew in 2004.

In his closing comments, Feuerberg gave credit to his “Team” at NOVEC, stating, “Over time I’ve become more and more convinced that teamwork is the only path to success in a competitive marketplace. The accomplishments of the NOVEC team during the past year demonstrate our desire and ability to improve our company.”

## NOVEC Named Community Outreach Business of the Year

The Prince William Regional Chamber of Commerce presented its first annual "Business Council's Community Outreach Business of the Year Award" to NOVEC at its December 15th luncheon. NOVEC was nominated for the award by several Prince William non-profit agencies.

Karen Wayne, CEO of the American Red Cross – Prince William Chapter, stated, "NOVEC has demonstrated a commitment to provide exceptional support to area charitable organizations. Not only have they been a partner in service with the Prince William Chapter of the American Red Cross for over 10 years, but NOVEC has sponsored many of our events and their employees take time to attend and participate in these events. After the hurricanes hit Florida, NOVEC sponsored a clothes drive for the victims.



*Karen Wayne, CEO of the Prince William American Red Cross, presents the first Prince William Regional Chamber of Commerce Award to NOVEC. Representing NOVEC are (L-R) Stan Feuerberg, CEO; Donna Snellings, public relations liaison; and Mike Curtis, vice president, public relations.*

No matter where the need, NOVEC and its employees will step up to the plate and assist in helping those in need.

"In addition to working with our chapter, NOVEC supports the arts, education and many other humanitarian works in our community. We are fortunate to have such a responsive and caring business in Prince William," commented Wayne.

## An Opportunity for High School Students

**A**TENTION members of the high school class of 2006 or 2007! If you have an enthusiastic interest in government and politics and would like to visit the seats of government in Washington, D.C., and Richmond to engage in conversation with your elected representatives, then apply today for a spot on NOVEC's Youth Tour delegation. Five students who receive electric power in their homes from NOVEC will be selected in April for the all-expense-paid program scheduled to take place June 19-23, 2005.

Participants will have the opportunity to interact with over 1,400 of their peers from across the U.S., learn about electric cooperatives, tour historical and cultural sites, and meet their representatives in Congress. There is also time for recreation as delegates from electric cooperatives across the country enjoy a

boat cruise, dinner dance and other activities.

In February 2006, the Youth Tour delegates will have the opportunity to spend a day at the Virginia General Assembly. They will meet with their local legislators, attend sessions in the House of Delegates and the Senate, and observe committee hearings in both houses.

To receive an application, mail this form to Donna Snellings, NOVEC Youth Tour coordinator, at P.O. Box 2710, Manassas, VA 20108. You can also download the application from the Education section on [www.novec.com](http://www.novec.com). **Completed Youth Tour applications and pertinent information must be received by March 18, 2005.** Interviews will take place in April for the selection of the Youth Tour delegates.

### Request for Youth Tour Application

Date: \_\_\_\_\_

School: \_\_\_\_\_ Class of: \_\_\_\_\_

Name: \_\_\_\_\_ NOVEC Account #: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ Zip: \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Phone #: \_\_\_\_\_

Name of Parent(s)/Guardian(s): \_\_\_\_\_

# Underground Power Lines Are Not a Panacea

Customers often ask why NOVEC doesn't put all power lines underground, believing this would provide improved aesthetics and reduce or even eliminate power outages. While it is true that having power lines out of sight is aesthetically pleasing, burying them is extremely expensive and does not eliminate outages.

## An expensive alternative

Although underground power lines are more aesthetically pleasing and reduce the amount of tree trimming that NOVEC must perform, the installation of underground lines is far more expensive. For NOVEC, a typical underground cable installation costs at least three to five times more than an overhead installation. And, this figure can increase sharply if rock or adverse soil conditions are encountered. According to a study by the Edison Electric Institute\*, the average cost for installing underground lines is estimated at up to \$1 million per mile or almost 10 times the cost of overhead.

One reason underground line installations are so expensive is that the work is more labor intensive and time consuming. Rather than just setting the poles and stringing the lines from pole to pole, an underground installation requires more construction. First, trenches are dug and padded to protect the cable, then the wire is laid and the trench is backfilled. Also, the equipment (transformers, enclosures, connectors) required to safely provide underground service is more expensive.

Finally, the cost of underground cable, which must be insulated, is typically eight to 14 times higher than its overhead equivalent. In some cases concrete duct banks must be constructed along with manholes, underground vaults and other special devices that also add to the expense.

## Why are there still outages in underground systems?

Underground systems can still experience outages, which are typically longer in duration than those on overhead systems. As NOVEC

**Footnote:** \* "Out of Sight, Out of Mind? A study on the costs and benefits of undergrounding overhead power lines," EEI, January 2004.



NOVEC line technician Robert Jackson prepares to splice a cable during an underground fault repair.

CEO/President Stan Feuerberg explained at the 2004 Annual Meeting, "When underground cables fail, they often fail catastrophically."

The most common cause of underground system outages is damage (cuts or nicks) to the cable. Although it is buried at a standard depth of at least 36 inches and has a protective outer insulation, underground cable is still susceptible to damage from digging or excavating.

Obviously, when a high-voltage line is actually cut, power goes out almost immediately. However, if a home-service line has its insulation nicked, the problem will not be immediately apparent. As moisture in the soil and underground water penetrate the nick in the insulation, the aluminum wires carrying the flow of electricity begin to oxidize. This can cause a "partial-power" problem, where the flow of electricity is restricted, causing your lights to dim or flicker.

NOVEC System Engineer Skip Hollcroft explained, "75 percent of NOVEC's secondary underground faults occur within the first four months of a customer moving into a new home." He added, "That's because after NOVEC installed the cable, another company installing their lines or a homeowner digging in the area may have nicked our cable and the failure is not immediate." You may not even be aware that the cable was nicked until several months later when you have a partial-power condition in your home.

"Usually the failure of an underground cable has to do with the integrity of the insulation," Allen Barbee, vice president of operations, explained. "There are very few cases where cable fails due to manufacturer's defects; these actually occur only once every few decades."

## Repairing underground outages

Although only 20 to 30 percent of NOVEC's outages during a typical year are underground, the average underground outage is almost always longer in duration than an overhead outage. "Underground lines often triple our typical repair time when compared to the repair of overhead conductors," commented Wayne Smith, system construction manager. "This is due to the fact that locating an underground fault is more difficult than an overhead problem where you can visibly see a



NOVEC uses special fences in substations with a prevalent squirrel problem, such as at Stonewall, Sudley, Ballsford and Cardinal substations. The inner fence, pictured here, is energized to give squirrels and other animals such as snakes and raccoons a mild shock to deter them from climbing any further and potentially causing an outage at the substation.

broken line or a tree on the line,” he continued. “With underground, the problem is usually not visible and special equipment must be used to find it.”

When an outage is reported at an underground service location, the first step is to determine if the overhead feeder lines are causing the problem. If all overhead feeder lines are intact, crews then have to determine what caused the failure on the underground system.

Very specific safety procedures are followed when locating a damaged underground cable (known as a fault) to ensure the safety of both NOVEC personnel and the general public. Once all required safety precautions are taken, trained NOVEC line technicians begin the task of locating the faulted area. The “faulted spot” may be no larger than a pin head and can be like trying to find a needle in a haystack. Radar-type fault-locating equipment is first used to determine the general area of the fault. Then a “thumper unit” is used. This unit discharges a high voltage onto the faulted cable and a “thumping sound” is heard when the voltage sparks at the break point. Acoustical listening equipment helps determine the exact location. This is a continuous process until the fault is located. Obviously, this method is more time consuming than visually patrolling an overhead power line for the problem.

Once the location of the fault is pinpointed, the cable and the area around it must be excavated. This requires a call to Miss Utility to identify other utilities that may be in the work area.

After the cable is excavated, repair procedures begin. This involves the removal of the damaged portion of the cable and the installation of a repair splice. Underground repairs must be exact and precise; measurements have to be within tight tolerances with no room for error. This is a highly specialized skill and part of NOVEC’s state-certified line technician training program.

Once repairs are completed and service is restored, then “clean up” is done. Repair work to underground lines can often be messy. NOVEC utilizes landscaping contractors to restore underground work areas as close as possible to their original condition. All landscaping repairs are generally completed within two weeks excluding delays caused by weather.

### **What are all those green boxes in my neighborhood?**

A common misconception about underground electric systems is that *everything* is underground. The reality is that only the cables bringing service through your neighborhood and to individual homes are underground. NOVEC’s underground equipment, such as transformers and switches, that remains above ground is housed in clearly marked, green pad-mounted boxes of various sizes. Line technicians must have access to this equipment at all times for repair and maintenance work (\*see accompanying information about transformer clearance rules). Inside the pad-mounted boxes, the cable actually comes out of the ground and is terminated. This termination allows the cable to be connected to the equipment. In an overhead system,

equivalent electrical equipment is either not required or is installed on the poles.

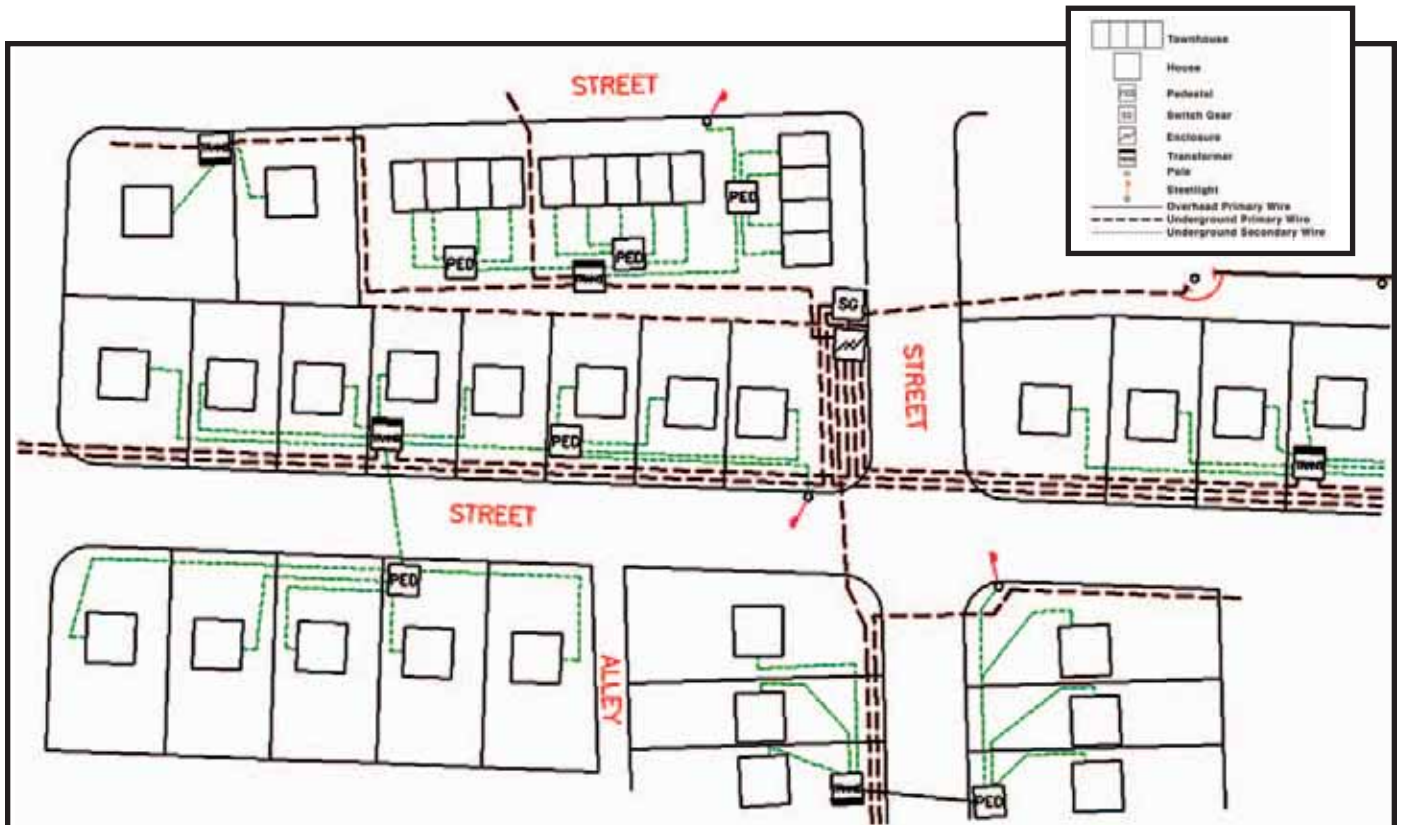
In a typical underground subdivision, an overhead primary feeder line is energized at 7,200 volts and goes underground to a padmounted transformer that may provide service to several customers. The role of the transformer is to “step down” the voltage from 7,200 volts to 240 volts, the typical household service level.

In larger subdivisions, there are also pad-mounted switches where the power enters the subdivision from the primary feeder line. These switches then feed multiple transformers within the subdivision, which in turn supply homes or pedestals. Primary feeder lines often connect many switches together

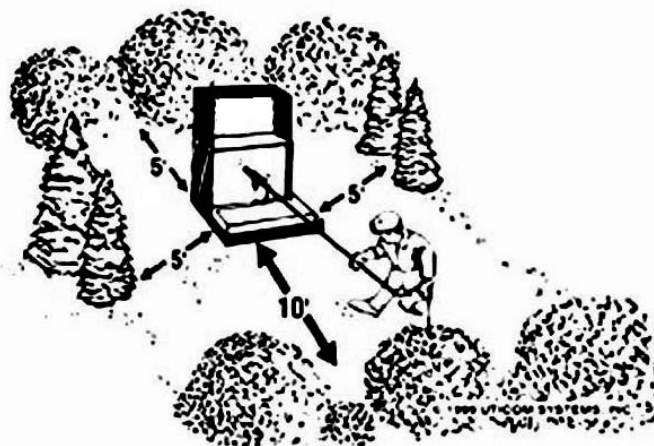
within a subdivision.

Some pad-mounted enclosures enable underground lines to go in many different directions. “Cables can’t just branch off from themselves in the ground; you must have a multi-termination point to allow the cable to travel in different directions,” Hollcroft explained.

**During major outages, restoring power safely to the greatest number of customers in the shortest time possible is our number-one priority.**



This diagram shows how power is carried to a neighborhood via an overhead line before going underground. It also shows the complex system of above-ground equipment that is necessary in an underground electrical system. All of the pedestals, switch gear, enclosures and transformers are housed in various sizes of green boxes and are clearly visible in most underground neighborhoods.



### **Transformer clearance rules:**

Much of NOVEC's underground electric equipment is above ground in green pad-mounted boxes, which contain cable terminations, transformers and switches. Access to these boxes is critical at all times for the efficient and safe operation of our electric distribution system. It is against NOVEC safety standards and the National Electric Safety Code to plant trees, shrubs or bushes that block safe access to these enclosures.

1. No plant material is allowed that at maturity will grow within 5 feet of the sides or 10 feet of the door to these units.
2. Trees and bushes cannot be planted within 5 feet of the sides and 10 feet of the fronts of the boxes.
3. Any offending plants will be removed.

**Call Miss Utility - It's the law!  
1-800-552-7001**

[www.missutilityofvirginia.com](http://www.missutilityofvirginia.com)

Before doing any digging on your property, Virginia law requires that you contact Miss Utility at least 48 hours before beginning your excavating. Miss Utility notifies participating utilities of the upcoming work so they can send a "locator" to mark the location of all underground utilities in the area. This free service ensures that you don't cut through any cables and possibly injure yourself, cause damage to your home or cause a power outage.

# Turn the Mill Around Campaign – Working to Save Beverley Mill



When Beverley Mill was destroyed by arson in October 1998, the community rallied together to save this local landmark by forming Turn the Mill Around Campaign.

Thoroughfare Gap has long been a major east-west thoroughfare, with Broad Run flowing through it. Today, Route 66 takes thousands of people through the Gap and past the charred walls of Beverley Mill, which was destroyed in 1998 by arson. Thanks to the work of *Turn the Mill Around Campaign*, these travelers will someday be able to stop, safely explore the stabilized ruins and learn more about the mill and the surrounding area. *Turn the Mill Around Campaign* plans to develop a public park that will interpret the Mill's significance as an early agricultural industrial site.

This is the second time local citizens have joined together to save Beverley Mill. In the early 1970s, the mill was slated to be demolished to make way for the building of Interstate 66. A citizens group formed and was successful in getting I-66 rerouted around the mill. This helped heighten awareness of the mill building and its historical importance.

## Turn the Mill Around Campaign

In October 1998, Beverley Mill was tragically vandalized and gutted by fire. After the fire, all that was left was a shell, with the entire inside workings of the building destroyed. Fortunately, the mill was built exceptionally well back in the 19th century, so the walls that remain are strong. "Builders during that time period apparently overbuilt, so the mill was built almost to be a fortress," Eileen Vroom, executive director of *Turn the Mill Around Campaign*, commented, "which is why it's still standing after almost 150 years." The mill is a massive seven stories constructed of locally quarried stone.

Soon after the fire, *Turn the Mill Around Campaign* obtained ownership of the property and work is underway to stabilize the mill walls. The goals of this nonprofit organization are to preserve the structure of the mill, provide public access, develop an interpretive program

of the history and significance of the mill and Thoroughfare Gap, and raise the funds needed to carry out these goals.

Plans call for walkways around the mill and interpretive signs explaining the milling process and the impact of the industrial site on the evolving economy of the area. A small stone house in front of the mill that served as the mill store will be restored and used as a visitors' center.

## Restoration Work

The Mill Campaign received \$300,000 in TEA-21 Transportation Enhancement funds from the Virginia Department of Transportation (VDOT), which was used to complete phase 1 of the stabilization project in May 2004. The project encompassed the structural stabilization of the south wall and corners, using the cutting-edge technology of an internal anchoring system. The 68 window and door openings were also reinforced with steel bars. "We did an emergency shoring of all the openings, to make the building more stable over a period of time," explained Vroom.

"One of the most difficult parts of the restoration effort was finding contractors to do the work and take on the challenge of figuring out how to keep the building standing," Vroom commented. "We finally found Cintec America, an England-based company that specializes in historic masonry building stabilization." Cintec also worked with other historic preservation experts from Conservation Solutions, Standard Restoration and Waterproofing, and Scaffold Resource.

## Project Funding

With phase 1 of the stabilization complete, the Campaign must secure additional funding before proceeding with more work. "Due to our funding situation, we can't stabilize the building all at once, we have to work in stages," Vroom commented. "Once we secure more funding, then we can continue with our work to restore the mill.

"We have received money from individuals and corporate donors like NOVEC, and we are continuing to pursue private foundations," Vroom said. "We need \$500,000 more just to finish stabilizing the building to make it safe." Many other facets of the site development can't proceed until the building is stabilized. "It's a Catch-22. We must be sure that this enormous 40-x-50-foot building is secure before continuing with other plans."

## Mill History

Originally constructed in 1742 as a gristmill by Jonathan and Nathaniel Chapman, a father/son partnership from a well-connected colonial family, Beverley Mill is one of the most important historic properties in Prince William County. It is on the National



The old mill store, which sits in front of the mill, will eventually be used as a visitors' center. In the 1930s, the store sold products from the mill as well as gasoline and other convenience items.

Register of Historic Places and is classified by the Comprehensive Plan as a Designated Cultural Resource. Believed to be the tallest gristmill in the United States, the mill is located on the Fauquier-Prince William border along Broad Run, which provided the water power to operate the grinding machinery of the millstones, up until the 1930s when a diesel engine was added for back-up power when the creek was running low.

The mill became a successful business that fostered the development of the Shenandoah Valley as a wheat and corn-producing region for the next 100 years. Built on an early colonial road, the mill had quick access to the Port of Alexandria where the flour was shipped abroad. The prosperity of the mill was enhanced in 1852 when the Manassas Gap Railroad was completed, passing beside the mill and reducing the travel time to Alexandria. In 1858 the Chapmans enlarged the mill, raising it to a total of seven stories and making it a model of agricultural technology.

After the Civil War, the Beverley family acquired the mill, which had been badly damaged, and by 1876 had restored it to once again be a successful milling operation. Originally known as Chapman's Mill, it then changed to Beverley Mill, the name that has carried through and remains today. The Beverley family owned the mill until it was sold to the Furr family who operated the mill until it closed in 1951.

As late as the 1940s, it was still grinding approximately 100,000 bushels of grain annually and had six employees. "People have commented to me that they were young and living in D.C. in the 1940s and they remember seeing Beverley Mill Flour at the Safeway on Capitol Hill," said Vroom.

The mill ceased operations in 1951, by which time large corporations had taken over most of the flour processing and small mills couldn't compete. At one time in history, mills existed in every community to provide local residents with flour and other products. For instance, in our area there was Aldie Mill and Buckland Mill, both of which are still standing today.

### Civil War Activity

During the Civil War, the Confederates used the mill as a meat-curing center and distribution warehouse. Sometime after the First Battle of Manassas the Confederates burned the mill to keep it from falling into the hands of Union forces. In August 1862 in the woods surrounding Beverley Mill, Union General Ricketts attempted to delay Generals Lee and Longstreet as they passed through Thoroughfare Gap to prevent them from

meeting up with Stonewall Jackson's troops near Manassas. Although the fighting slowed the Confederates, they routed the Union troops and moved to join Jackson as they prepared for the Second Battle of Manassas. Historians say that if Ricketts had prevailed at the Battle of Thoroughfare Gap, the Second Battle of Manassas would never have taken place.

### Chapman and Beverley Information Wanted

*Turn the Mill Around Campaign* is searching for information about the Chapman and Beverley families associated with the mill. Documents such as letters, diaries, invoices, bills of sale, etc., would help with the ongoing research of the mill's history. They're also looking for any paintings, portraits, drawings and photographs of the Chapman and Beverley families.

And, they are interested in speaking to anyone who has had an association with the mill, from childhood memories to those who may have worked there until its closing in 1951. Please contact Eileen Vroom, executive director, with any information you would like to share at *Turn the Mill Around Campaign*, P.O. Box 207, Broad Run, VA 20137, (703) 753-3273, [mill@highstream.net](mailto:mill@highstream.net).

### Important Reminder!

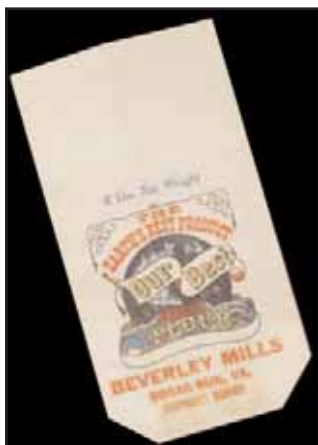
In its present condition, the Beverley Mill is a hazardous place. *Turn the Mill Around Campaign* and Prince William County remind you to stay off the property unless accompanied by a *Turn the Mill Around Campaign* staff member. This is for your protection as well as for the protection of this historic site. For a birds-eye view of the mill, hike the trails of the Bull Run Mountain Conservancy (BRMC) located next to the mill.

### Help Keep The Walls Standing! Support The Beverley Mill Stabilization Project

*Turn the Mill Around Campaign* needs to raise funds to complete the stabilization project. Only one wall has been stabilized at this point and work must continue in order to prevent the other walls from collapsing.

**Please send your tax-deductible donation to:  
Turn The Mill Around Campaign  
P.O. Box 207  
Broad Run, VA 20137**

Checks can be made out to TTMAC. For more information, visit their Web site at [www.chapmansmill.org](http://www.chapmansmill.org) or call (703) 753-3273.



### Mill Bags For Sale

**Some of the original Beverley Mill cornmeal, flour and chicken mash bags (paper) dating from the 1940s are available for sale. Prices range from \$8-\$14. These are the real thing, removed from the mill when it closed. The bags are in mint condition and many people have purchased them to frame for decor. It's remarkable to note that these bags are so similar to the bags that flour is currently packaged in. Visit [www.chapmansmill.org/bags.htm](http://www.chapmansmill.org/bags.htm) for details or call (703) 753-3273.**

# NOVEC and Communities ... A Powerful Connection



## Employees Brighten Holidays for Local Families

NOVEC employees caught the spirit of the holiday season for the annual Adopt-a-Family gift-giving program. Employees granted the Christmas wishes of 15 needy children in Prince William County as well as the residents of the Fauquier Homeless Shelter. (L-R) Kelly Hawn, electric systems development; Hank Zarandi, system engineering & planning; Carol Cancelmi, distribution engineering; Angie Thomas, electric system development; and Richard White, system construction, display some of the toys brought to the Gainesville facility for the Fauquier Homeless Shelter.

## NOVEC Employees Embrace Holiday Spirit



NOVEC employees and their family members sing holiday songs at Birmingham Green. Santa Cullen (Vince Cullen, facilities management) visits with a nursing home resident. Ray Trenum, construction, leads the crowd in song. Mary Trenum accompanies the carolers on piano.

NOVEC is proud of our employees who give unselfishly through the year and especially during the holidays to improve the quality of life for our neighbors. On December 16, NOVEC employees, families and friends brought cheer to the residents of Birmingham Green Nursing Home in Manassas. They not only visited with the residents, but also participated in holiday caroling. NOVEC's own "Santa Cullen" is welcomed by the residents each year. To continue with the spirit of the holidays, NOVEC employees purchased gifts for about 60 facility residents to be distributed at their family celebration.



NORTHERN VIRGINIA ELECTRIC COOPERATIVE



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