



Volume 12  
Issue 3

# aeef/fyi

FALL  
1999

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"America's  
Favorite News"

October 1999



HAPPY - BRAVE - NICE

Our 35th Year

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one of the most outlandish  
characters around.  
(Present company excluded.)

## AEF: The Next Generation

Time does actually fly. We at AEF Sales were reminded of that this summer when Pietro Fasolino became the newest addition to *TEAM AEF*. Pietro, who graduated from Flagler College in Florida last May, is Mr. Pete's son, and Chairman Tony's grandson.

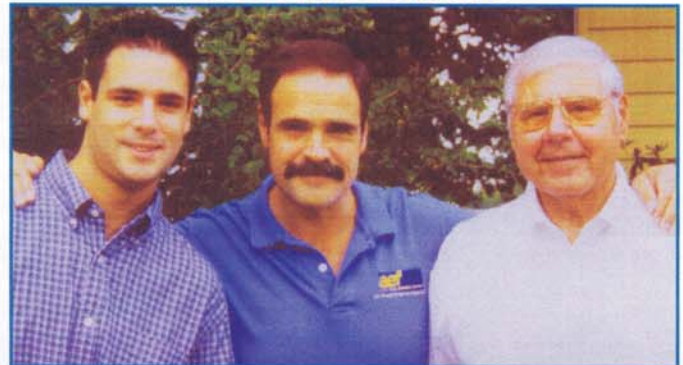
The family connection is also forcing some longtime AEF customers to confront the swift passage of years. The foreman on one jobsite Pietro went to was taken slightly aback: "I can't believe it. I worked with your grandfather!" (Editor's Note: The foreman actually used more colorful language.) Pietro's take on it: "It's nice to know how many people remember working with him, and my father."

One of Pietro's first assignments was to set up a computer program that now allows AEF to prepare complete isometric heater cable installation drawings in-house, something that will really help our customers.

For Pietro, who had packed and shipped orders during school vacations, it's been interesting to go and meet the people that go with names he already knew. By going to the jobsites, he's gotten to see that the situation in the field sometimes bears very little resemblance to what was on the drawings, and why *TEAM AEF's* traditional willingness to go to the field to make sure the installation goes right is so important---one of the things that's kept our customers coming back for, well, for generations.

An upcoming trip to Nelson Electric's plant in Tulsa, Oklahoma, followed by visits to our other principal companies, will help add to his product knowledge, as well as let him meet the technical and customer service people we depend on. *All the best, dude!*

### AEF: THE NEXT GENERATION



#### THE ADVENTURE BEGINS.

*Pietro, Peter, and Tony, shown here discussing business, or possibly just posing for a picture. Tony started the business in 1964, Mr. Pete joined up in 1975. Pietro is the newest member of Sgt. Tony's Lonely Hearts Club Band.*



**UNO BOSSO BALLISTICO**  
Sketch by Leonardo, c. 1503.

*If pipes freeze over a weekend, and there's no one there to hear them, will the boss still go ballistic on Monday?* The answer was YES, so Leo went to work on the problem. He needed something that could detect ANY kind of problem that could cause heat traced pipes to freeze; and it would have to work with ANY kind of heater--self-regulating, MI or constant wattage. It would have to be easily designed into new systems, or retrofitted into existing installations. And it would have to stay on the job around the clock. A tall order, but those Renaissance guys were *persistent*. After years of effort daVinci completed the design for Nelson Electric's CM-1, the first microprocessor based heat trace monitor. (Continued on page 3.)

## It Takes a Genius

**"Must have taken a genius to come up with that."**

That's what most folks say once they've seen Nelson Electric's CM-1 Cable Heat Trace Monitoring System in action. But they're often surprised to learn that the genius behind the CM-1 is none other than the famous Renaissance painter-scientist-inventor-philosopher, Leonardo da Vinci.

**C'e Una Problema.** Leonardo actually started work on the sys-

tem as the result of pondering the famous philosophical problem: *If pipes freeze over a weekend, and there's no one there to hear them, will the boss still go ballistic on Monday?* The answer was YES, so Leo went to work on the problem. He needed something that could detect ANY kind of problem that could cause heat traced pipes to freeze; and it would have to work with ANY kind of heater--self-regulating, MI or constant wattage. It would have to be easily designed into new systems, or retrofitted into existing installations. And it would have to stay on the job around the clock. A tall order, but those Renaissance guys were *persistent*. After years of effort daVinci completed the design for Nelson Electric's CM-1, the first microprocessor based heat trace monitor. (Continued on page 3.)

# Diamond Jim

One of the most unusual characters New York ever spawned (present company excluded) has to be Diamond Jim Brady. Born in New York in 1856, he worked as a hotel bellhop, and then in various positions with the New York Central Railroad. Then he took a sales job with a railroad supply house, (*distributor salesmen take note!*), and he was on his way. He earned huge commissions and was soon a multi-millionaire who set the pace for conspicuous consumption.

And we mean consumption. When it came to eating, Diamond Jim was in a class by himself. He liked to start his day off right. Right for him meant eggs, pancakes, pork chops, cornbread, fried potatoes, muffins and a steak, washed down with a gallon of orange juice. That held him over till lunch, which usually meant two lobsters, deviled crabs, clams, oysters, beef and another gallon or so of orange juice. He finished with a selection of pies. Not *slices of pie--pies*.

For dinner he'd head from his home on West 86th Street over to Broadway, and his favorite restaurant, Rector's. There he'd start with two dozen oysters, half a dozen crabs, six or seven lobsters, two whole ducks, a steak, and five or six venison chops. For desert: a two pound box of chocolates. (Jim was particularly fond of candy.)

When it came to fashion, Jim knew how important accessories were, and for him that meant diamonds. A giant diamond stick-pin for his tie, diamond cufflinks, more diamonds on his vest and watch chain, and a huge one on the head of his cane.

Diamond Jim was a generous man, lavishing gifts (and feasts) on friends, and Broadway showgirls. But his most spectacular gifts went to Lillian Russell. (A legend in her own right, Lillian was born in Iowa, made her way to New York, and ruled Broadway as 'The English Ballad Singer'. But that's another story.) Her favorite gift was a gold-plated bicycle, its' spokes decorated tastefully with rubies and sapphires.

You may have guessed that in his later years Jim experienced some health problems. His lifestyle caught up with him in Atlantic City in 1917. He was sixty years old. His friend, restaurateur Charles Rector remembered him fondly: "He was my 25 best customers."

## Backwords

### Hit It With a Crowbar

What would happen if you short-circuited a transformer with a crowbar? What if you did it again and again and again? Probably wouldn't be too good for the transformer (or for the person with the crowbar either). But a customer involved in plasma research needed a 1500kVA padmount to transform 13,800 volts delta to 19,000 volts dc, and that could handle unlimited crowbar short circuits, and he knew who to call. R.E. Uptegraff designed and built this one-of-a-kind transformer, and everyone was very, very happy. WARNING: DO NOT TRY THIS AT HOME!

### Fame

Growing up in Liverpool, Ringo Starr was very sickly; some years he spent more time in the hospital than in school. In fact, when he went to get a certificate of attendance to allow him into a job training program, school authorities refused to give it to him, saying there was no record of him having ever been a student there. However, years later, when the Beatles were on top of the world, the school held a fund raiser, where for a small donation, you could 'sit at the same desk once used by Ringo Starr'.

### The Whole Truth

While telling the truth, the whole truth, and nothing but the truth seems to have fallen out of fashion these days, Nelson Electric's RENEGADE Heat Trace Design Software is a refreshing exception. Other software limits you to the products and technology of a single manufacturer, and that can easily double the cost of your system. RENEGADE lets designers compare products and solutions from ALL the major heat tracing manufacturers, so you can evaluate the alternatives and choose the best design for your application. Makes using any other heat trace design software seem silly, doesn't it?

# aef

A.E.F. SALES ENGINEERING COMPANY

## TRANSFORMERS

### Central Moloney

Single Phase Transformers: Pole Type, Padmounted, Vault, and Stepdown Components: Bushings-Switches-Accessories

### R.E. Uptegraff Manufacturing

Liquid Filled Transformers to 15mva Subsurface, Load Center, Station Type Rebuilding and Rewinding Services

## HEATER CABLE & CONTROLS

### Nelson Electric Heater Products

MI Cable for Pipe Tracing & Snowmelting Self-Regulating Cable for Pipe Tracing Self-Regulating Cable for Roof & Gutter De-Icing Thermostats & Controls CM-1 Cable Monitoring Systems CM-2 Heat Trace Management System

## UPS SYSTEMS

### IPM Industrial Power Group

On-Line UPS 600va to 500kva Specialty Inverters, Battery Trackers

## CLEAN POWER PRODUCTS

### Rapid Power Products

Power Conditioners, Voltage Regulators Isolation Transformers to 1000kva Rectifiers, 50kw to 3000kw

## WIRE & CABLE

### Conex Cable

Aluminum Clad Shield Wire, Guy Wire Messenger Wire, and ACSR/AS (AW)

### Nehring Electrical Works

Bare Copper and Aluminum Cable Aluminum Clad Cable Weather Proof Copper Wire Ground Rods & Accessories Cathodic Protection Cable

## - 247 HOME RUNS! -

In response to last year's exciting Home Run fest, an advanced computer model was created here at aef/fyi to determine how some ball players of the past would do in today's game, given the smaller ballparks, feeble expansion teams, total lack of decent pitching, the tiny strike zone, and the baseball with the Flubber® core. Here are the results:

Computer Generated Home Run Stats for the 1998 Season

Rocky Colavito-104  
Moose Skowron-74  
Choo Choo Coleman-63  
Marv Throneberry-62  
Phil Rizzuto-58  
Whitey Ford-52  
Soupy Sales-49  
Mickey Mantle-247  
Lassie-34



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*I'll tell you when I start to worry. I start to worry when 'officials' tell me not to worry.*

Dave Barry

*Doctors pour drugs of which they know little, to cure diseases of which they know less, into human beings of whom they know nothing.*

Voltaire

*As one grabbing hold of the ears of a dog is anyone passing by that is becoming furious at the quarrel that is not his.*

Proverbs 26:17

*There's nothing to learn from the second kick of a mule.*

Mississippi Proverb

*You can't make a racehorse out of a pig, but you can make a very fast pig.*

John Steinbeck

*I learned late in life that we tend to meet any new situation by reorganizing. And a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization.*

Petronius Arbiter

*There is no subject so trivial that it will not grow to infinite proportions if one's entire attention is devoted to it.*

Leo Tolstoy

Over the last year, every computer in every AEF Sales office that was more than two years old has been replaced. With an eye toward the millenium, we've updated and upgraded hardware and software. Some of the changes are easy to see: for instance, the newsletter you're reading was produced completely in-house, using a high speed color laser printer. Or our company e-mail system. Some of the changes are harder to see, changes made with an eye toward tomorrow, and the company that we want to be.

It's not easy. Besides investing money, you've got to invest time and energy. (Memo to the AEF IT Department: *Great going, guys! You're the best!*) When you're pushing technology hard, it sometimes pushes back. Training and learning are part of every team member's day, and there are a thousand little glitches to be overcome or worked around. (Memo to Bill Gates: *Hey, could you finish up Windows 98 before you release Windows 2000?*)

But what's the purpose of all this technology? Is it just to have the latest toys on the desktop? Well, partly yes. If you're going to work all day, it might as well be fun. More important, though, is the ability to work more efficiently and effectively, individually and as a team. Because when a team is working together, seamlessly and enthusiastically, much more can be accomplished than by individuals working alone.

One of my favorite examples of teamwork can be found at Disney World. One thing that every visitor seems to find remarkable is the cleanliness of the place. So who's responsible for picking up stray trash in the Magic Kingdom? *The first Disney team member who sees it.* There's a task to be done, and the first person available gets it done.

Applying that same principle to a sales and service organization isn't easy. It takes patience. It takes unselfishness. It takes information technology. And maybe it can't be done at all.

But we're taking a whack at it.



## The Industrial Strength UPS

International Power Machines Industrial Product Group has introduced the toughest on-line, single phase UPSs in the world, Model BPII-S HE, in two sizes, 15kVA and 25kVA. The new single phase units are a dream come true for industrial users, who need a UPS that can stand up to harsh environments. Most UPSs are built for life in a nice quiet office someplace. They want carpeting, air conditioning, and no heavy inrush type loads please! Well, that ain't the way the industrial world is, so if your UPS is gonna live and work in a blue collar world, you need the only UPSs built tough enough to take it. The handy chart below should help make choosing a manufacturer a little easier. (If you've got a less strenuous requirement, IPM has single phase UPSs from 600va to 12kVA, all with double conversion reliability, and true sine wave power, and continuous voltage regulation.)

### - Official UPS Comparison Chart -

Feature / Requirement	IPM Industrial Strength UPS 	Ordinary Wimpy UPS 
Heavy Duty 14 ga Cabinet	YES	Sorry, no can do. 18 ga only.
Heavy Duty Filtration	Of Course!	NO
50 Degree C Rating	No Problem.	Is it getting warm in here?
Conformal Coated Boards	Absolutely.	Huh?
Oversized Inverters <i>for inrush type loads</i>	Yup, ready for the toughest jobs.	That sounds like hard work.
120 V DC Output <i>compatible w/existing rectifiers &amp; batteries</i>	YES	Depends on the meaning of 'compatible'.
Phone Home	YES	Sorry, wrong number.
OVERALL TOUGHNESS		

**More About Phone Home.** Since your UPS takes care of vital equipment in case of power problems, shouldn't your UPS have someone to turn to when *it* has a problem? With the Phone Home feature, your IPM Industrial Strength UPS has someone to turn to day or night, 7 days a week. It knows who to call, what to tell them. Trained IPM counselors listen to your UPS, diagnose any problem, and in many cases actually correct them right over the phone. Isn't that comforting?

# Bernadette

## The AEF Sales Answer Cow

Guest Columnist



*Bernadette is a Registered Holstein, and a Notary Public.*

DEAR BERNADETTE:

I'm getting ready to buy some heater cable for a project, and someone told me to make sure I get the cable with the strongest bond between the bus wire and the conductive core matrix. What the heck is so important about *that*? Aren't all those self-limiting cables really about the same? M.B.

DEAR M.B.:

The strength of that bus wire-to-core bond is a direct measure of the life expectancy of the cable, so yes, it's important. Very important. Here's why.

If the bond is weak, degradation will occur at the interface, causing a high contact resistance to develop between the bus wires and the conductive core matrix. As this resistance *increases*, power output *decreases*, till the cable puts out no heat at all, or 'goes dead.' That's a bad thing.

Nelson Electric uses a unique process in the manufacture of their self-regulating cable, that results in a bus wire-to-core bond that's TWICE as strong as any competitor's. That's a good thing. A very good thing. You should insist on it. *Ciao.*

DEAR BERNADETTE:

Hey! What you were just talking about---is that the same as a bonded jacket? S.L.

DEAR S.L.:

No. 'Bonded jacket' refers to an inner thermoplastic jacket that is extruded *over* and bonded *to* the conductive core. When that jacket is bonded to the core material, it prevents moisture from migrating to the core of the cable in the event of damage to the *outer* jacket. (Nelson Electric's Limitrace cables are the ONLY heater cables built with a bonded inner jacket!) This eliminates cable failures caused by moisture, and also eliminates the chance of wet-wire fires. So you really want to be certain of bonding (jacket-core *and* bus wire-core) before you specify or buy any self-regulating cable. Hope that clears it up for you!

*Anxious? Tense? Need Help?  
Don't fret, ask Bernadette. Write to her c/o AEF Sales,  
P.O. Box 295, Mamaroneck, NY. 10543.*

## Genius at Work . . .

The microprocessor first checks the thermostat, to see if it's calling for heat. Then it checks the **voltage**: no voltage might mean the breaker has been tripped by a fault, or maybe the breaker wasn't turned on after servicing. Either way, you need to know.

Next step: checking the actual **current** against the acceptable tolerances you've set for that circuit.

Finally the CM-1 checks for **continuity**, making sure the bus wire in a parallel cable is intact along the entire length of the cable. And it does it *without* the cable having to have a monitor wire. (A clever little device known as a Continuity Monitor Device--CMD--makes this possible.) Then it's on to the next circuit. And so on, and so on.

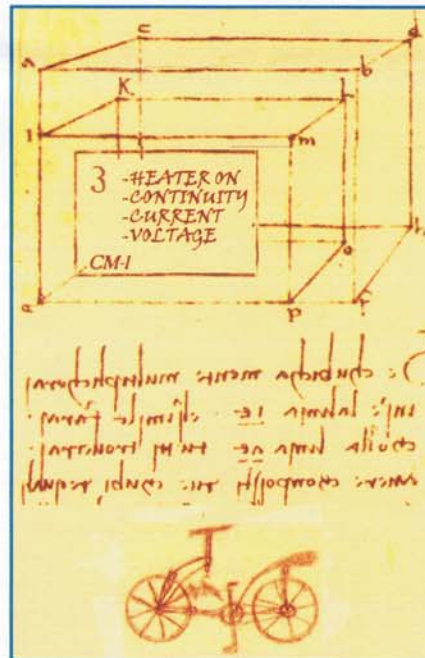
The CM-1 continually checks every heater circuit, and lets you know if there's a problem in time to keep it from becoming a BIG problem.

The CM-1 will monitor *any combination* of cable types in your system, and it can be designed into a new system or retrofitted into an installation you've already got.

The CM-1 doesn't get easily bored, which is good, since frankly it's not very exciting to just keep checking and rechecking the same heater circuits twenty-four hours a day, seven days a week. And if you crave the kind of excitement that frozen pipes and plant shutdowns can bring, then the CM-1 is *not* for you.

But if you're the less adventurous type, or if you already have enough stuff to worry about, you should find out more about it. There's a couple of ways to do that. Hang around outside the Metropolitan Museum of Art on the off chance (make that *way-off* chance) that Leonardo shows up, and ask him. Or you can call your AEF rep up and ask *him*. (This is what we'd recommend.) You could wind up with a smile on your face that will have people guessing for five hundred years.

**EDITOR'S NOTE:** *If you need something even more observant, ask us about Nelson's CM-2 Heat Trace Management & Control System, which adds functions like high and low temperature alarm. If the CM-1's a bit bigger than you need, ask about Nelson's ET Electronic Thermostats.*



*Original Sketch for Nelson CM-1 by Leonardo da Vinci, 1509. Also the first bike.*

*Why do men open a drawer and say 'Where is the spatula?' instead of, you know, looking for it?  
Susie Walker*

*Long experience has taught fatal consequence may follow if I get too addicted to a theory. Then I try and see, can I make everything fit. I can, and first thing I know theory explodes in countenance with loud bang. Much better I have found to keep mind free and open.  
Charlie Chan*

*Do that which you judge to be beautiful and honest, even though you should acquire no glory from the performance.  
Pythagoras*

*Nobody is normal.  
Dave Barry*

*Let Fortune do her worst! You must not take things too much to heart, but try to repair what you can and let the rest go, as I do, with a light heart.  
Baldassare Castiglione*

*In the small hours of the night giants seem less unlikely.  
J.R.R. Tolkien*

*What happens to most people is when their first dreams get killed off nothing ever takes its place. The important thing is to keep holding out for possibilities, even if no one ever really makes it.  
Bruce Springsteen*