



# aef/fyi



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THE OFFICIAL NEWSLETTER OF A.E.E. SALES ENGINEERING COMPANY

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"America's  
Favorite Newsletter"

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TEAM AEF



Our 43rd Year

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### LOCATION, LOCATION LOCATION!

You won't believe where some folks are saying to put RTD's. Here's what you should know before it's too late.

### WE THINK, OUR CUSTOMERS WON!

Even we were surprised at how much money we could save our customer with just a little thinking. This is definitely worth knowing.

### ONE MORE THING...

A famous TV detective finds some companies' ideas about heat trace monitoring a little suspicious.

### ASK BERNADETTE

The World's Only Answer Cow has sage words about who wins when floor heating systems loaded with toxic fluids go bad. You won't be surprised by the answer.

## End of The Line for RTD's?

**"Yes, Mr. Cleaver, I'm sure those RTD's  
will be just fine if I put them at the end of the pipe"**

Eddie Haskell was quite a character. We had always thought he would wind up in Congress, but turns out he's in the heat tracing business.

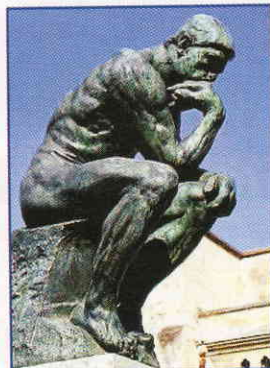
There's companies out there who push a heat trace 'monitoring' system that uses RTD's mounted at the end of the pipe: the pitch is that this lets them use the heater bus wires to carry temperature information from the RTD back to the controller. That saves having to run separate wires back to the controller; pretty neat idea, huh? ("That's a lovely dress, Mrs. Cleaver.") Like a lot of Eddie's schemes, this one has a surface appeal: save wiring, save money.

But your role model here should be Ward Cleaver: asking a few simple questions to see if this really is such a great idea.

**First Question:** You're using RTD's so you know what temperature the pipe is actually seeing, yes? Well, if the pipe run ends up where the pipe is about to pass into a heated area, is the RTD going to give you an accurate picture of the rest of the pipe? What about if the RTD is mounted at the top of a vertical run? The IEEE (IEEE-515-2004) says that the chimney effect may cause 'a substantial temperature difference' between the bottom of the pipe and the top, which could lead to a warm, happy RTD turning the controller (and the heater cable) off while the bottom of the pipe freezes. Kind of defeats the whole notion, doesn't it? (Go to 2)



Still Eddie  
after all these years.



## 'I Think, Therefore I Save'

**Thinking is getting to be a lost art in a lot of places, but  
at AEF Sales we love thinking about ways to help our customers**

Recently we were working on a design for a decent-sized heat trace system, about 3000' of pipe, from 2" up to 12" O.D. The mechanical spec called for 4" of fiberglass insulation on the 12" pipe, and 3" on everything else. Since that's what the spec said, that's what we did.

But then we got curious: What if we re-did the design based on 1" less insulation? What effect would that have on the installed cost of the system? Read on and find out.

**Yikes!!!** A couple of the lines required higher watt densities, which bumped the cost of the heater cable up \$170, and we figured the owner would spend about an extra \$500 a year on electricity. But the cost of insulation would be **cut by \$40,000!** We were glad we think about it, and so was the customer.

**Follow the Money.** For a typical heat tracing job, the heater cable and controls (the stuff you are hopefully buying from TEAM AEF) averages about 40% of the electrical side of things, with another 40% going for labor, and 20% for related electrical construction materials --- conduit, breakers, that sort of thing.\* The cost of insulating those pipes will normally run about **double** the electrical dollars, so it really pays to look at the whole picture. Hey, we've been at this for over 43 years, so we're Whole Picture Specialists. So use us; then you too can say: "AEF think, and I saved!"

\* If you don't get the on-site help you deserve (and get from AEF), labor costs can go up fast. Way up. Way fast.



# memo

FROM  
PETER FASOLINO

*Get off my cloud.  
The Rolling Stones*

*Everything that's fun  
in life is dangerous.  
And everything that isn't  
fun is dangerous too.  
It is impossible to be  
alive and safe.*

*P.J. O'Rourke*

*Why do you people keep  
paying out money for  
what is not bread, and  
why is your toil for what  
results in no satisfaction?*

*Isaiah 55:2*

*It ain't a bad plan to keep  
quiet occasionally, even  
when you know what  
you're talking about.*

*Kin Hubbard*

*Horse sense is the thing  
that keeps horses from  
betting on people.*

*W.C. Fields*

*Always drink upstream  
from the herd.*

*Will Rogers*

*We find it preposterous  
that those morons at  
AEF Sales have almost  
58 miles of heater cable  
in their warehouse.*

*Harvard Business Review*

*Hey Harvard Dudes:  
Go take a hike!*

*Team AEF*

Back in the early 1900's, Will Rogers left Oklahoma and was rambling around the world, to New York, London, Argentina and beyond, eventually latching up with Texas Jack's Wild West Show in South Africa. It was there he first labeled himself 'The Cherokee Kid' and began earning a living with his rope tricks and stunt riding. Then it was on to Australia with a circus.

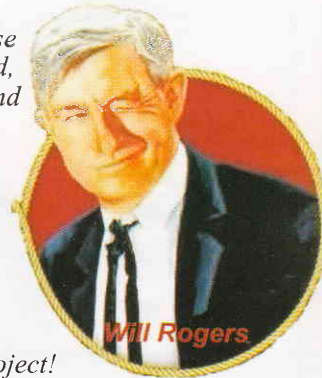
At a show in Australia he performed his signature trick, hooking his toes around the saddle horn and picking up three handkerchiefs off the ground while riding at a full gallop. The governor-general of Australia was in attendance and sent an aide over to ask Will to repeat the trick. Will offered to do it again -- for one hundred fifty dollars. When the man "squalled like a wildcat", Will said, "You tell the governor-general if he'll do it cheaper, I'll loan him my horse and handkerchiefs." As it turned out, the crowd took up a collection, raised the money, and Will repeated the trick.

These days, a lot of material suppliers are willing to sell you a horse and a handkerchief, as long as there isn't any hard work involved. And, of course, some folks will go for the horse and handkerchiefs now, and worry about the bumpy ride later.

But at A.E.F. Sales, we take a different approach. We'll be there at every stage of the project, from the earliest design concepts through installation, start up, and training the end user's maintenance staff, going to the job site as often as it takes to get the job done right.

Fortunately, enough people have preferred the A.E.F. Sales way doing business to keep us going and growing since 1964.

Give us a call and put the A.E.F. Sales Team to work on your next project!



**EDITOR'S NOTE:** Will Rogers was a personal favorite of AEF's Chairman Tony. In fact, on one of his visits to the Nelson plant in Tulsa he made it a point to hornswoggle someone into taking him to the Will Rogers Memorial in Claremore OK. Will was born in 1879 in what was Indian Territory (now part of Oklahoma). His parents were part Cherokee and Will grew up on a ranch, roping and riding. He quit school in the 10th grade and started doing roping and riding tricks in circuses and vaudeville.

On the vaudeville stage he started chatting with the audience, telling jokes and making wry comments on current events. Pretty soon people were more interested in what he had to say than in any roping tricks, and Will became a star. He made over seventy movies. By 1934 he was the most popular actor in Hollywood, and the highest paid. He wrote a newspaper column, and did regular radio commentaries. He loved flying, and traveled around the world, making friends wherever he went. He was on a flight to Alaska in 1935 with famous aviator Wiley Post, when his life was ended in a plane crash.

It's a sad commentary that such a wise and decent human being like Will Rogers is largely forgotten today. (When Disney's Imagineers were planning the American Adventure pavilion at Epcot, their first choice to 'host' the show was Will Rogers. But research showed that too few people knew who he was, so they had to settle for Ben Franklin and Mark Twain.) Here at aef/fyi we will attempt to redress that by including a Will Rogers quote in every future issue. You can find out more about Will at [www.cmgww.com/historic/rogers](http://www.cmgww.com/historic/rogers).

## End of the Line for RTD's? . . .



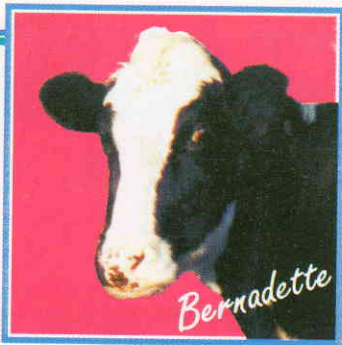
*"How am I supposed to know  
what the pipes are doing, boss?  
The RTD's ain't workin'."*

**The Moral:** If the reason you are using RTD's is to monitor pipe temperature, put them where they will give you the most accurate reading for each individual pipe; otherwise, why bother? The Mavens of Heat at AEF Sales can help you get the heat tracing and monitoring system that does what you need it to do. Put our experience and knowledge to work for you!

**Second Question.** What happens if there's a break in the bus wire? That's easy: A break in the heater bus essentially disables all temperature monitoring for that pipe. Is the pipe temperature at 50 degrees, giving you some time to troubleshoot before the danger of a freeze-up? Or is it 34 degrees and dropping, where the options might be to run pumps to keep flow, or drain the lines. Kind of ironic that when the heater cable has been compromised and you really need to know the pipe temperature, you can't get it. Your system may not function, but you can always remind the boss how much you saved on installation! (Wait! -- that's probably not a good idea.)

*"You could have a warm, happy  
RTD turn off the controller  
(and the heater cable) while  
the pipe is freezing."*





**Bernadette**  
The AEF Sales Answer Cow

DEAR BERNADETTE:

You had a pretty scary news item in your last newsletter, where that Hollywood producer Katzenberg got \$2 million for damage caused by fluid leaking from a floor-warming system. The poor slob who supplied the system was in bankruptcy. I wonder how much of that money Katzenberg gets and how much the lawyers keep. How do I keep *myself* out of a spot like that? I've worked too hard to build my business to lose it under a legal avalanche. W.N.

DEAR W.N.:

You're right; when one of those fluid-filled sys-

tems goes bad the lawyers are the only ones who come out ahead. Charles Dickens had it about right: once you understand that the purpose of the legal system is to create employment for lawyers, it all makes sense.

The best thing you can do to keep yourself away from those rascallions is to use Nelson's Inconel-sheathed M.I. cables for all your floor warming (and snow melting) requirements. Someone once told me they should call M.I. cable "*The Boring Way to Keep Floors Warm*". I couldn't agree more.

DEAR READERS:

Thanks for trying to help answer the question as to why and how the earth keeps spinning

Reader T.K. sent a link to a NASA website, which said it kept spinning due to 'angular momentum', with the example of a spinning figure skater, who spins faster when she pulls in her arms.

Reader M.R. (who noted that he never thought he would be e-mailing a cow!) Explained that the rotation does slow down and speed up depending on variables that include the earth's magnetism, the constant torquing of the sun's and moon's gravity, and even El Nino effects.

Me, I'm still confused. But thanks, guys!

## Just One More Thing About These RTD's, Sir

*I've been going over all this information on RTD's and monitoring systems, but I don't mind telling you sir, I'm confused.*

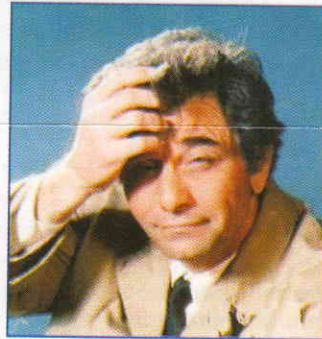
*Now here's something I just don't understand, sir: One company in New York actually sells an RTD that can't operate below 14 degrees F. Now I'm pretty sure the temperature in New York must go below 14 degrees, so why would someone use an RTD like that? I'm no expert sir, but I can't understand that one at all.*

*And another thing, sir, another company, a big one---well sir their RTD's are okay, but their control panel--- it can't be installed under 32 degrees F. Just think of that, sir: Your heat traced pipes are all outside, but the panel that controls has to be inside where it's warm. Does that seem strange to you, sir? I don't mind telling you, that bothered me---but that's probably just me sir.*

*OK, so this panel has to go inside someplace, fine. But their website says it shouldn't go anywhere that's 'electrically noisy'. Now me, I never thought electricity was noisy, but my wife, sir, she told me that if they said don't put it where there's electrical noise, there must be a reason. I know better than to argue with her, she's usually right, so I look into it, and I gotta tell you sir, I haven't seen so many warnings since I tried to put a gas barbecue grill together; to tell you the truth sir I still haven't put it together, and the missus, sir --- well she doesn't like that one bit.*

*But anyway, sir, this website that tells you a whole bunch of things you gotta do to protect this control panel from electrical noise--- you won't believe this sir: "Pre-existing equipment such as UPS systems or variable frequency drives must contain noise-suppression to minimize impulse spikes." Spikes--that sounds dangerous to me sir. And "only heat-tracing should be powered from the heat tracing transformer". So this heat tracing system has to have its own transformer sir, all for itself---is that what that means? And not just any transformer---it has to be an isolation transformer, and it has to have a front end filter on the primary side, sir. This here panel seems mighty particular. See, it all has to do with that 'electrical noise' sir. They say that if there's noise around their panel won't work right. Warnings like that sir, they make me nervous.*

*So I called some experts, AEF Sales right in New York, asked them if there was any way to not have to deal with these electrical prima donnas, that's what I call them sir. You're not gonna believe this sir, but there's better monitoring systems that are nowhere near as finicky. So what I can't understand sir, is why anybody would use these temperamental systems. Could you explain that to me, sir?*



*We're all different, and we're all a little strange.*  
Big Lu from New York

*We don't know what we want but we're ready to bite someone to get it.*  
Will Rogers

*If your head is wax, don't walk in the sun.*  
Ben Franklin

*When you are younger you get blamed for things you never did and when you're older you begin to get credit for virtues you never had. It evens itself out.*  
Casey Stengel

*There's two theories to arguing with a woman. Neither one works.*  
Will Rogers

*98% of all statistics are made up.*  
Unknown

*Most people don't know the difference between an inconvenience and a problem. If you break your neck, if you have nothing to eat ---then you've got a problem. Everything else is an inconvenience. Life is inconvenient. Life is lumpy. Learn to separate the inconveniences from the real problems. You will live longer and you will not annoy people as much.*  
Sigmund Wollman



# Engineered



No question the ancient Romans were great engineers: Exhibit A, above, the Pont du Gard. Depending on which experts you believe it was completed either in 19 B.C., or 50 A.D., and took either 3 years or 15 years to build. Either way the darn thing is 900 feet long and 160 feet high and was built without mortar, just stones piled on stones; stones by the way that weigh up to 6 tons each.



The bridge was part of an aqueduct that was no slouch either. The aqueduct was 30 miles long, and supplied the city of Nimes with 44 million gallons of water daily. The gradient of 0.4 per cent (about 21 inches of vertical drop per mile) is maintained over the whole stretch.

## Backwords

### Mamma Mia! Thatsa Lotta Heater Cable!

TEAMAEF has always been known for having a RIDICULOUS amount of heater cable in our warehouse, but this spring we set a new record with 305,109 feet of heater cable on the shelf (that's 57.8 miles!) in over 60 fun flavors, including upwards of 200 M.I. heater cables ranging in length from 30 to 210 feet. Basta!

### What's In a Name?

There is a town in California that is actually named Rancho Cucamonga.

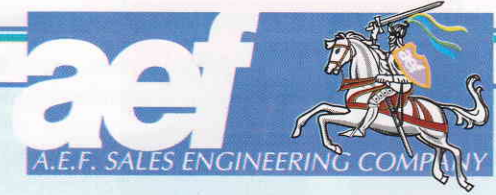
### Heat Tracing Fit for a Queen

When the Queen is in town, she stays in Brooklyn. We refer, of course, to the Queen Mary 2. She's a big girl, she is, 1,132 feet long, 23 stories tall, carrying 2,620 passengers. Her Big Apple home is the newly renovated Pier 12 Cruise Terminal. When it came time to heat trace, TEAMAEF got the call. You gotta treat a queen like a queen, right?

### Virtual Inventory?

When bad storms hit, utilities need transformers, and they need them FAST. One local utility asked Central Moloney via TEAMAEF for a teeny tiny favor: The utility keeps 250-300 CM 25 kVa and 50 kVa polemount and padmount transformers on hand---could Central Moloney keep an equal number in finished inventory at their plant? This would give the utility double the number of transformers that could be drawn on if the need arose during storm season, from June 15 to October 31. Central Moloney understood the need, and agreed. Utilities like doing business with Central Moloney: CM's only business is transformers and components, and the company is owned and run by people who know transformers. With no far-away Corporate Pezzanovante to keep happy, Central Moloney can concentrate on making their customers happy.

Does your transformer supplier listen to you?



### TRANSFORMERS

#### Central Moloney

Single Phase Transformers: Pole Type, Padmounted, Vault, and Stepdown  
Three Phase Padmounted Transformers  
Components: Bushings-Switches-Accessories  
JSRP Job Site Ready Padmounts

R.E. Uptegraff Manufacturing  
Liquid Filled Transformers to 20mva  
Subsurface, Load Center, Station Type  
Rectifier Applications, Zig Zag Grounding  
Phase Changing and Phase Shifting  
Traction Power, Current Limiting Rectifiers  
Rebuilding and Rewinding Services

### HEATER CABLE & CONTROLS

Nelson Electric Heater Products  
MI Cable for Pipe Tracing & Snowmelting  
Self-Regulating Cable for Pipe Tracing  
Hot Water Maintenance Cable  
Self-Regulating Cable for Roof & Gutter De-Icing  
Thermostats & Controls  
CM-1 Cable Monitoring Systems  
CM-2 Heat Trace Management System  
CM-3 PLC Based Circuit Management System  
Heat Tracing Since 1964

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FOR SALE: Collectible Fred Eigenrauch Business Cards!  
A collector's dream come true! We have 1000 that are perfect except Fred's name is spelled wrong, plus another 1000 where his name is spelled right but 'Sales Manager' was left off.  
Please contact Chris at Ext 256, before Mr. Pete finds out.

## Introducing... Gabiella Fasolino



Gabiella made her grand entrance April 11th, weighing in at 8 lbs, 2 ounces. Pietro, Cindy and big sister Isabella all doing fine. This is Granddaughter #2 for Mr. Pete.

aef/fyi is carbon neutral, and contains no trans-fats.