



aef/fyi

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

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"America's
Favorite Newsletter"

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TEAM AEF



HAPPY - BRAVE - NICE

Our 40th Year

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CALL AEF, SAVE \$250K

Find out how a clever phone call to AEF saved a local utility big-time; and how TEAM AEF could save you big-time too.

HE-E-ERE'S JONNY!

We have humans, and we're not afraid to use them! Meet the newest member of TEAM AEF.

GROUND FAULT PROTECTION WITH NO GF BREAKERS?

The investigative report the manufacturers of GF breakers didn't want you to see!

JUMBO

The most famous elephant ever! Here's his true story.

BIG & LITTLE

Brought to you by the letters A, E, and F.

BERNADETTE

The World's Only Answer Cow (as far as we can tell) has, well, answers.

Local Utility's Call to AEF Saves \$250,000!

By studying the problem, thinking, and then working, TEAM AEF makes the difference

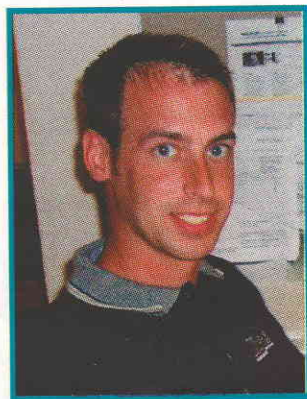
The winter before last a local utility here in AEF Land experienced a heat tracing failure and subsequent freeze-up on a vital oil pipe. The heater cable provided viscosity control on a 1500 foot long section of a 12 inch oil line which provided fuel to the boilers. They jury-rigged some heated shelters to get them through that winter, and once the weather broke getting the heater cable operational again became Priority 1.

Plant operation's first move, naturally enough, was to call in the people who had provided the original system. That made sense: who better to troubleshoot their own equipment and get things set to rights. When their rep showed up he took a quick look around, and pronounced judgement: The heater cable is obsolete, and parts are no longer available. The only option: replace the entire system; it'll cost you around \$75,000; end of story. (Note: this was not AEF!)

But the plant people knew that wasn't the end of the story. Since replacing the heater cable involved removal of insulation with asbestos, the tab for asbestos removal would be \$100,000; re-insulating the lines would add another \$125,000. Yikes! That's \$300 grand! Isn't there something else we can do? Isn't there somebody we can call? *(Go to page 2 to find out who they called.)*



NOT A PROBLEM ANYMORE!
This fuel line was a giant problem for a local utility when it froze up. The Mavens of Heat from TEAM AEF solved the problem, and saved the customer a cool quarter million bucks.



Jonathon McAndrew
TEAM AEF's Inside Salesman

He-e-ere's Jonathon!

In our never-ending quest to take care of our customers better than anyone else on the planet, we are happy to introduce the newest member of TEAM AEF, and our first inside salesman ever, Jonathon McAndrew.

Jonathon has ten years of sales experience under his belt, and his conscientious attitude and desire to take care of customers made him a perfect match with AEF's way of doing things. For over 40 years we've been building and maintaining lasting relationships with customers using the ludicrously old-fashioned method of doing whatever it takes to keep them happy. We figure Jonathon will fit right in.

Jonathon has gotten extensive product training in heat tracing, and on AEF's computer and intranet systems; next month he'll be headed out to Nelson in Tulsa for more training, and to meet the factory people we depend on day in and day out.

Jonathon is based in the AEF Warehouse, and he's ready to help you with your heat tracing requirements right now. He's at extension 260, so give him a call and put him to work!

Welcome aboard, dude!

*Una mane non si lava,
senza l'altra mane.*
Mema

*The older I get, the more
I listen to people who
don't say much.*
Germaine G. Glidden

*Of course, every house is
constructed by someone,
but he that constructed
all things is God.*
Hebrews 3:4

*It is hard to believe in
God, but it is far harder
to disbelieve in him.*
Harry Emerson Fosdick

*It's amazing what you
can accomplish with
an unlimited amount
of money.*
Eve Rostikov

*Practically everything
that for years we believed
to be true has been
proven false or incorrect
by subsequent discovery.
In fact there is only one
statement that I would
now dare to make
positively: There is
absolutely nothing faster
than the speed of light --
maybe.*
Edward Teller

*Most people operate on
the basis of 'Do unto
others as they do unto
you, but you do it first'.*
George Harrison

I'm not coming home.
Bill Bailey

Better GF Protection With No GF Breakers

(How can we say that? Is it really possible?)



For a lot of folks complying with NEC 427-22 has meant using GF (Ground Fault Equipment Protection Device) breakers to provide the 30mA ground fault protection required by code. And while it's true that these breakers put them in compliance, they are not the only answer, and not always the best answer. The Best Answer? Sometimes it's the CM2 and CM3 Series monitoring and control systems from Nelson (CM2001 for single circuits, and CM2GF or the new CM3 for multiple circuit systems). These clever beauties provide complete monitoring of heater circuits 24/7 for every type of heater cable, PLUS the required ground fault protection.

Better than Breakers. The CMs are better than breakers. Breakers open when a fault occurs, period. That's all they know how to do. But the CMs have GF Alarm and Trip settings (adjustable of course) for ground leakage current that allows for an alarm so plant operators can be made aware of, and correct a ground fault problem *before* it reaches a level that takes the heater offline. (Merely being in compliance with NEC 427-22 is OK, but if a plant gets shut down because a critical line froze up, the chances are pretty good that no one is going to get on the phone congratulating you for being in compliance.) That advance notice can save a lot of headaches.

Consolation Prize. If a CM of some sort isn't in the cards for your project, and you're gonna have to use GF breakers, you don't want to use more than necessary, since they're so darn expensive. Good design practice dictates that no more than 5 heater segments be powered from one breaker. Within that guideline, how can you reduce the number of breakers required on any given project? Here's how: The breakers for self-limiting cables must be sized to accommodate cold temperature inrush currents and manufacturing tolerances of the heater cable, so you can save substantially IF you choose cables with lower inrush. For example, on a 277V system you'll need 20-37% fewer breakers if you use Nelson's HLT cable instead of some competitor's 'equivalent'. And when you work with TEAM AEF on your project, you'll get a complete design including inrush and operating current for each breaker so that every circuit breaker works as hard as you do.



Phone Call to AEF Saves \$250K . . .

(If you guessed 'TEAM AEF', congratulations! Take the rest of the day off!)

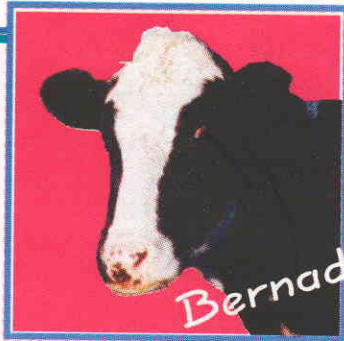
TEAM AEF arrived on-site and walked the length of the troubled oil line. First thing they noticed was that there were junction boxes every 200 feet; that gave them points at which the heater cable could be tested without disturbing the insulation. Was the problem caused by a bad section or two? Now they had a way to find out. Back in the plant manager's office TEAM AEF studied the original drawings. It turned out that the original design included both a primary and a redundant system. Hm-mm; if we can test all those segments, maybe between the primary and redundant cables we can piece together one functioning system, *eliminating* the need for new cable while spending *nothing* on insulation removal or replacement. It was worth a try, and the plant issued a work order to AEF to proceed with testing.

A week later TEAM AEF reached their conclusion: it could be done, and work was started. As the manufacturer of the original system had noted, the special terminal boxes needed were obsolete, so AEF had replacements custom-built. Careful testing of individual heater segments revealed several failure points, all in locations where the original insulation had been changed---indications were that mechanical damage had been done to the cables while the pipe had been worked on. Cable that was under the original insulation all tested fine, and after considering the size of the pipe, the operating temperatures and flow conditions, it was determined that leaving short sections of the pipe unheated was a viable option. The working segments on each side of a failure point were connected by pipe and wire.

The end result was that TEAM AEF was able to restore both the primary *and* the redundant systems. Controls were updated, low temperature monitoring was set up, and the job was finished in time for last winter's record low temperatures. It worked perfectly.

The plant operations manager summed it up: ***'This saved me a quarter of a million dollars, got the line functional and back on line before the freezing season.'***

There is a moral here. In a world where no one seems to know what they're doing anymore, we do. In a world where no one bothers to think anymore, we do. And in a world where people just plain don't care anymore, we do. Make TEAM AEF your heater guys.



Bernadette
The AEF Sales Answer Cow

DEAR BERNADETTE:

The shop just sent over a box of heat tracing material for a cooling tower we're doing. It looks like it should be enough to do the job, but how am I supposed to figure out what goes where? We're supposed to be off this job by the end of the day tomorrow, and I'm getting a little tired of the boss being on my back about how long this is taking. I need help, and I need it quick. C.B.

DEAR C.B.:

Alas, for this particular cooling tower I'm afraid you're out of luck. From the circumstances you describe, it is certain that the material your shop sent you was not acquired from AEF Sales --- that is simply not how they operate; imagine dropping a bunch of material in your lap, and then leaving you to fend for yourself, as though this was some kind of reality show! Since substantially more than 50% of the installed cost on any heat tracing system is labor, anything that helps reduce labor will reduce the installed cost of the system, n'est-ce pas? TEAM AEF knows that, and they know that if the person responsible for

DO YOU KNOW WHAT KIND OF HEATER CABLE YOU'LL NEED TOMORROW?

Neither do we. That's why we put a ridiculous amount of heater cable and festive accessories in our warehouse, ready to go.

In fact we put so much material into our Amazing Local Stock that some people make fun of us. But we don't care---our customers get what they need, when they need it.

Here's a sampling of what's on the shelf right now:

- 147,114 feet of gorgeous heater cable, in over 59 flavors, including cable for high temperature and monitor wire applications
- 6 CM1 Monitor Panels (Yup, 6!)
- 353 Assorted Thermostats (including 4 dual thermostats we ordered by mistake one time)

Remember last winter? We do; and we're ready. Now you are too.

Editor's Note: We had thought the boxed item above was the end of this story. Turns out it wasn't --- see the important and shocking update at the right!

installation (that's you in this unfortunate situation) is not given adequate information, things will take a lot longer. That's a bad thing: keep in mind this equation: *Time=Money*. So TEAM AEF does everything necessary to make sure you've got the *information* you need, along with the material. They'll go to the jobsite to ensure that the person responsible for installation (that's you again) is clear on what goes where; and now on more complex installations they provide an installation drawing in glorious color, showing all the details of cable installation, thermostat locations, termination kits, EVERYTHING, all color coded and as clear as can be.

I'd recommend leaving a copy of this column where the boss can see it! Your next cooling tower will go much smoother, I promise!

DEAR READERS:

So many of you have written about the recent Olympics that it is just not possible to answer you all individually. I would have to agree with many of you, who while expressing admiration for the skills on display, wondered at the wisdom of a life so unbalanced; to dedicate oneself for years and years to attain something so ephemeral, in an endeavor where years of work could be undone with one tiny mistake (or one cuckoo judge for that matter), does not seem to me to be the course of reason.

I must also agree with readers who were stupefied by the inclusion of such 'sports' as synchronized diving, lawn darts, or that event that combines running and shooting rifles, for goodness' sake. And if any of you dear readers can enlighten me on how to tell women's beach volleyball from a commercial for some kind of light beer, I'd be most grateful!

Coraggio!

THIS JUST IN! Sneaky Mr. Pete Strikes AGAIN!!!

Longtime readers of *aef/fyi* know that every year at this time a battle takes place here at AEF Sales over how much heater cable we should put into stock.

The battle pits the Sage of Purchasing, who carefully analyzes sales reports and other Top Secret data to make a rational decision on what to put in stock, against the mercurial Mr. Pete, who always wants more, MORE, MORE!

This year, for the first time in memory, the issue was resolved peacefully, resulting in the stocking levels shown in the box at left.

Purchasing happily took a week off, at which time Sneaky Pete placed an order for an ADDITIONAL 56,000 FEET OF CABLE. Is there no limit to such treachery?

Knowledge is power.
Francis Bacon

Knowledge is scary.
Dooms Madigan

Knowledge is confusing.
Linda Brooks

*Never eat more
than you can lift.*
Miss Piggy

*I have all the money
I need, as long as
I never have to buy
anything again.*
Jackie Mason

*Capi che la felicità non è
mai la meta di un infinito.
Ora e insieme luna e sole,
sasso e nuvola; era
insieme riso e pianto.*
Eros Ramazzotti

*If you can walk, you
can dance. If you can
talk, you can sing.*
Zimbabwean Proverb

*A platypus is an animal
with a bill like a duck, a
tail like a beaver, and a
fur coat like a chorus girl.*
Ludwig Von Drake

*We all live in a
yellow submarine.*
The Beatles

Jumbo



quart of whiskey. During his 17 years in London Jumbo gave rides to thousands and thousands of children, and was a particular favorite of Queen Victoria.

In 1882 P. T. Barnum offered the London Zoo \$10,000 for Jumbo, and they accepted. All of England from the Queen on down fought to keep Jumbo in London, but Barnum wouldn't let go, and in 1882 Jumbo arrived in New York and began touring as part of the Barnum & Bailey Circus. He was the huge success Barnum had figured he'd be, and was viewed by over 20,000,000 people.

In September 1885, after a show in Ontario, Canada, Jumbo was being led by his trainer back to his private railroad car when an unscheduled freight train rounded a bend. The engineer hit the brakes but couldn't stop in time; the locomotive and first cars of the train derailed from the collision, and the engineer was killed. Jumbo went down on his knees, his skull fractured. He rolled onto his side, his trunk beckoned his trainer. Moments later he was dead.

Backwords

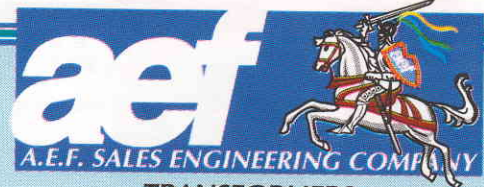
Here We Grow Again

Checking back through the aef/fyi archives revealed some shocking numbers when it comes to what we keep in stock for our customers. In Fall 1988 we had a little over a mile of cable on hand. By 1996 it had grown to 2-1/2 miles. January of 2000 saw us with 12 miles of cable, and by March 2002 we had upped the ante with 16 miles worth in our new warehouse. For Fall 2004 we put 38 miles of heater cable in our warehouse. Why do we do it? Because we love you, that's why; and we want you to be happy.

Nice Guys Finish 67th

Charles Lindbergh's flight from New York to Paris in 1924 made him world famous. It also made him the 67th man to fly non-stop across the Atlantic. Lindbergh had been preceded by a two-man flight in 1919, and two dirigible crossings, one in 1919 that carried 31 men, and another earlier in 1924 with 33 men aboard.

The Transformers Are Coming! The Transformers Are Coming! The transformers from Central Moloney, that is. Month after month hundreds and hundreds of beautiful, reliable CM transformers have been making their way from the factory in Arkansas here to various parts of AEF Land, making it a warmer, brighter place. Utilities like dealing with a company whose only business is transformers, a company run by people who know transformers. And Central Moloney is not beholden to any remote corporate owners; CM is run by the folks who own it, and they're responsible only to their customers. Find out what kind of a difference this can make



TRANSFORMERS Central Moloney

Single Phase Transformers: Pole Type, Padmounted, Vault, and Stepdown
Three Phase Padmounted Transformers
Components: Bushings-Switches-Accessories
NEW! 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
NEW! CM-3 PLC Based Circuit Management System

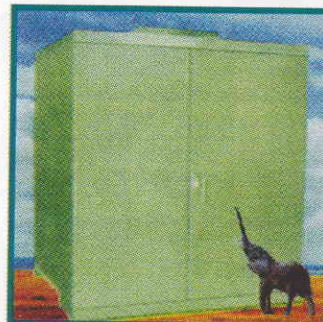
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BIG and Little

BIG

Many things are BIG. Here we see a Gigantic Padmount built by R.E. Uptegraff. So Big! 12mVA with a 43.8 kV primary! Didn't know anyone built padmounts that big?

Uptegraff does, cause one of their customers needed it. If you need something special they can help, even if it's not something Big.



Little

Some things are Little. Like newborn babies. Like this little baby here.

Her name is Amanda, and she was born August 19. Her grandpa is AEF's own Wes Rayburn.

Her proud parents are Frank and Maria Smith. Congratulations, etc, etc.

Next Time: Far and Near!