

CURRENT connections

INTERSTATES

Providers of Premier Services

Fall 2003

A MESSAGE FROM THE CEO

Our Relationships & People Make This Anniversary Golden

OUR VISION:

Turning Visions into Reality through:

- People
- Adding Value
- Alliances
- Performance

OUR VALUES:

Building Relationships through:

- Dependability
- Integrity
- Trust
- Quality
- Family

OUR MISSION:

Providers of Premier Services

The Interstates Companies are celebrating our 50th year in business this year. As with any golden anniversary there are stories of the joys and hardships that make up our past. We have had a lot of fun reliving and passing on some of those memories to the next generation. Many of these stories explain a lot about the character of our company. Our companies' character has been defined by our core values and that helps us to continue to tell the story of what have been the real reasons as to why we have been so successful the past 50 years. When I reflect on this success, I am quick to understand that it is tied to three distinct groups of people.

The first group is all the great customers that have honored us with their business over the past 50 years. We do appreciate that so many great companies have given us a chance to earn their business. Companies are made up of people, and these people have allowed us to build relationships with them. These relationships have allowed us to call many of you friends, and we truly enjoy working for and with you. I would like to say thank you to each and every one of our customers for the business that you have given us. We appreciate not only the business but the friends that we have made along the way.

Our allied business partners have been a huge part of our success. This group

includes our contractor partners, our suppliers and the manufacturers they represent, our insurance and bonding companies and agents, our legal counsel, our bankers, and our audit and financial advisors.

The final group is our employees. This family of companies is much bigger than any one person. Many people have made this organization the great company that it is today. Our philosophy has always been

to hire the right people, give them the proper tools and training to be successful, let them do their jobs, hold them accountable, and have fun at work.

I am sure that I have forgotten to mention someone, but the point is we could not have been successful the past 50 years without all the groups or individuals that have taken an interest in helping us along the way. Thank you for walking beside us the past 50 years, and it would be my hope that we can continue this journey together and that we can have mutual success.

Interstates, Happy 50th Anniversary!



Larry
DenHerder



FROM TROUBLESHOOTING TO TRAINING

Interstates Assists Food Processor with Developing Long-Term Program for Taming Downtime



Jim Popma

A simple problem-solving exercise is now a long-term training initiative for Advance Brands LLC, an Orange City, IA food-processor. And Interstates Engineering is playing a key role in its development.

The story began when Mike Klemme, maintenance supervisor at Advance Brands, called on Bill Noack, his former instructor at Northwest Iowa Community College, for technical help on a production line that had continuous breakdowns.

When it became apparent that the problem involved more than one or two motor drives, the company determined a broader combination of engineering studies and training would offer lasting benefits.

Once it was decided that a thorough study of the plant's electrical system would be needed, Interstates developed updated electrical drawings. According to Interstates Electrical Designer Jim Popma, good drawings are a key component of the site audits

the company performs for customers that can pay big dividends in cost and time savings.

"As plants are updated, electrical equipment is often added to a system a little bit at a time," Popma explains. "For example, when a breaker is tripped, a technician may have to search extensively to find the cause, because drawings of the system may be incorrect, out of date or nonexistent. With an accurate, updated set of drawings, you can identify the source of a problem, fast."

Popma also notes that the investigation required to develop drawings can yield significant benefits, identifying needed corrections that improve safety and operational issues.

The investigation also identified service grounding as a weak point in the electrical system. The grounding upgrade reduced motor drive failure and improved control system stability (fewer shutdowns) during electrical storms. Interstates' site audits can also offer insight into usage, control system

interface and other issues that effect a plant's efficiency.

Training is a key component of the overall program, which is being funded by an Iowa Workforce Grant. Electrical trainers from the Business and Industry Center at NCC are training mid-management personnel on electrical and motor controls. Topics may range from short circuit training to arc-flash training. A certified technical training project is also under way with the community college and original equipment manufacturers (OEMs) to develop in-house training documentation so that Advanced Brands can train instructors internally, who can then train technicians.

Popma notes that while Interstates' typical site audits may take "a couple of days or months," their involvement with Advance Brands has already continued for about six months.

"They're seeing so much benefit," he says, "they keep asking for more."

GETTING SHAPES IN SHAPE

Interstates Electric Prepares Plant for New General Mills Cookie Line

Coming soon to a store near you – thanks in part to a strong team effort from Interstates Electric – a new line of cookies from national food giant General Mills.

Interstates completed the electrical and control wiring for a plant in Murfreesboro, TN that will be producing a new Pillsbury cookie line called Shapes. As the name suggests, the sweet treats are bake-yourself cookies with a seasonal theme – such as Thanksgiving or Christmas shapes. The specialty product requires spe-



GENERAL MILLS

cialized equipment, including a unique kind of ultrasonic cutter (there are only five of them in the world) and the Sig PDS (Product Delivery System)

that is the ONLY one of its kind.

According to Project Foreman Rollie Pitts, it was a wiring project that presented some special challenges. First, the crew of 34 was faced with an aggressive schedule: the project began on April 10 and was finished by August 1. Then, there were the demands of working next to an open, operating

food line – creating special demands in fabrication and all-around house-keeping to meet the customer's stringent maintenance standards.

"It took a total team effort to bring this project in on-time, completely to the customer's satisfaction," Pitts says. "We had superior support from everyone at Interstates, all along the line – from the folks at our materials warehouse to the Project Manager."



MAXIMIZE YOUR ELECTRICAL INVESTMENT

How VFDs Minimize Electrical Operating Costs

Variable torque loads such as centrifugal pumps and fans, are the best candidates for energy saving VFD applications. Pumps and fans are often sized for worst-case conditions and usually operate at 10-50% of their rating.

Traditionally, these motors are operated at full speed, and control valves or air dampers are utilized to control (or block) the extra output not required by the process.

Since power requirements for variable torque loads drop off by the cube of the

speed decrease, a VFD can be used to decrease the motor speed so that only the needed energy is utilized. This results in significant savings whether you are considering a new installation or contemplating a system retrofit.

The U.S. Department of Energy reports that the average pumping system operates below 40% efficiency. The report also notes that 70% of

pumping systems are oversized. If this is the case in your facility, you can reduce your energy bill.

Consider a VFD that delivers 100hp to a 100hp centrifugal pump. When the pump is operated at 50% of full speed, the drive efficiency is 89.1% (see the table to the left). At 1/2 of its rated speed the pump requires only 1/8th of its full load power ($\frac{1^3}{2^3} = 1/8$). The power required by the pump is reduced from 100hp to 14hp

($1/8 \times 100\text{hp}/0.891$).

A typical pump application has a 100 hp motor operating a centrifugal pump 24 hours a day, 365 days a year. This requires about \$27,500 worth of electricity a year, at \$0.04 per kilowatt/hour. If the control valve is replaced with a VFD, the pump requires only 14hp to operate the pump at half speed. This results in energy costs of only \$4,000 per year.

Additional advantages from the use of VFDs include efficiency gains of the overall system; improved motor power factor; elimination of emissions that come from overpressure; ease in ability to closely control the process; reduced wear on motor, fan, and pump bearings; extended life on pump seals; and overall system installation economy, given the new generation of VFDs.

The following websites offer more information on VFDs: www.drivesmag.com and www.oit.doe.gov/bestpractices (do a word search for ASDs).

See www.interstates.com for additional articles describing how you can Maximize Your Electrical Investment. If you have comments or questions, please call Doug at 712-722-1664, x159.

Table values of the efficiency example are provided by the U.S. Department of Energy. There is no widely accepted test protocol that allows for efficiency comparisons between different drive models or brands. An inverter can be set up many ways and that can affect operating efficiency.



Doug Post

Adjustable Speed Drive Efficiency (in Percent) as a Function of Percentage of Full Operating Speed

Variable Speed Drive hp Rating	Percent of Full Operating Speed			
	25%	50%	75%	100%
1	9.4%	44.2%	70.5%	82.5%
5	29.6%	74.7%	88.3%	92.4%
10	35.3%	79.0%	90.3%	93.5%
25	35.6%	79.4%	90.6%	93.8%
50	43.3%	83.5%	92.1%	94.4%
100	54.8%	89.1%	95.0%	96.6%
250	61.2%	91.3%	96.1%	97.3%

BENSEMA, McDANIEL MARK MILESTONES

Two Interstates employees are celebrating significant career anniversaries. Brandt Bensema, Director of Business Development, has achieved 25 years of service; Wayne McDaniel, Project Executive, has achieved 30 years of service.

Since his first project as an apprentice electrician for Snap-On Tools in Algona, IA, Brandt has served Interstates in a variety of roles – first in the field for

eight years, where he worked his way up to project superintendent before taking an “office job” as an estimator. From estimating, Brandt moved into business development.

Wayne McDaniel also began his career as an apprentice electrician with Interstates in 1973 on a project in Mississippi. His work with Interstates has taken him all over the United States, and as far away as Cairo, Egypt where he worked from 1983-1985.

Both Bensema and McDaniel think it’s the people at Interstates and the

close-knit culture of the company that have kept them on board. “It’s a good group of people,” Wayne says. “I don’t know if I could find another company I’d be so comfortable with. It’s fun to be able to work with your friends.”



Brandt Bensema



Wayne McDaniel

More Project Success Bang... For your Specialty Contractor Buck

Finally, proof of what your experience has told you for some time. Real numbers showing that selecting your major specialty contractors early and based on value leads to higher performing projects.

Recently, Penn State researchers commissioned by the Construction Industry Institute sorted through data from 350+ projects and found that when comparing the top quartile performing projects to the bottom quartile projects, the most significant project variable was the various specialty contractors' experience, capability and performance.

In a related study, Penn State researchers found project success was strongly correlated to certain specialty contracting practices. This study compared projects deemed excellent with those considered average. Its primary findings were:

- On excellent projects, key specialty contractors were on board prior to design being 20% complete (before schematic design was completed). Specialty contractors were brought on board significantly later (70% design or greater) in average projects.
- In 75% of excellent projects, specialty contractors performed their own design (Design-Build). In 75% of the average projects, design was performed by others.
- Not a single excellent project had procured its specialty contractors by

open bidding. In excellent projects, contractors were selected by negotiation, prequalification or single sourcing. On the other hand, 55% of the average projects used the lowest bidder method of selection.

- Excellent projects used the Guaranteed Maximum Price and Cost + fixed fee contracting methods 78% of the time. Average projects relied on lump sum contracting the majority of the time (65%).

Of course, pulling off a new method of contractor selection can be challenging and might be outside the way your organization has historically "done it." But

with so much to gain, it may be time to commission an experiment in your organization.

Fortunately, DBIA drafted an addition to its Design-Build Manual of Practice covering these specialty contractor selection best practices and how to implement them. The finished document will be available from DBIA in October.

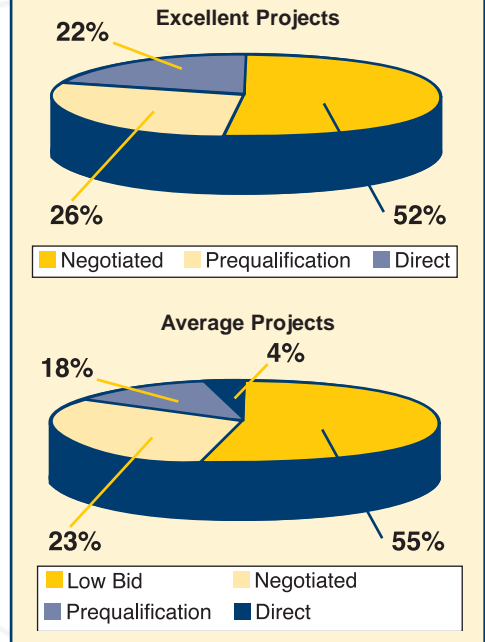
Obviously, to reach the success above, the specialty contractors selected need skills and willingness to participate early in the project. These skills certainly

"We are aggressively and continuously adding skills and services that can aid you in leveraging your capital."



– Dave Crumrine

Results From Alternate Procurement Methods



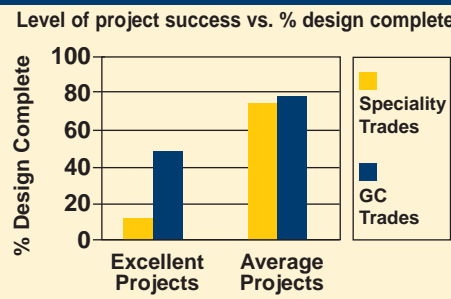
Source: Construction Industry Institute

aren't available from every contractor, and a track record is key.

Here at Interstates, we have historically provided these services and are pleased to see the "proof" in the numbers. We

also recognize that the services our customers needed to deliver successful capital projects yesterday may not be enough to succeed tomorrow. We are aggressively and continuously adding skills and services to aid you in leveraging your capital.

Design Status Selection Time and Project Success



Source: Construction Industry Institute

Call me with questions on leveraging these studies for your organization. We would be happy to help you expand your own capital project success.

Dave.crumrine@interstates.com
Phone: 712-722-1662 x153.

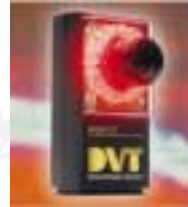
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THE VISION THING

How This Expanding Technology Can Impact Your Business

While vision system technology is not exactly new, Interstates is finding more uses, and more demand, for vision systems in a growing range of industries. In general, a vision system uses a camera-like device that appears similar to a closed-circuit camera with a built in computer board that is essentially a PC. The "computer" can be programmed to perform a wide range of functions.



"As the equipment has become more affordable, it's become more practical to develop vision systems for more applications," says Preston Vander Plaats, Senior Control Systems Developer for Interstates. "Ten years ago, equipment could cost around \$200,000. Now, it might cost around \$5,000. It's a dramatic difference."



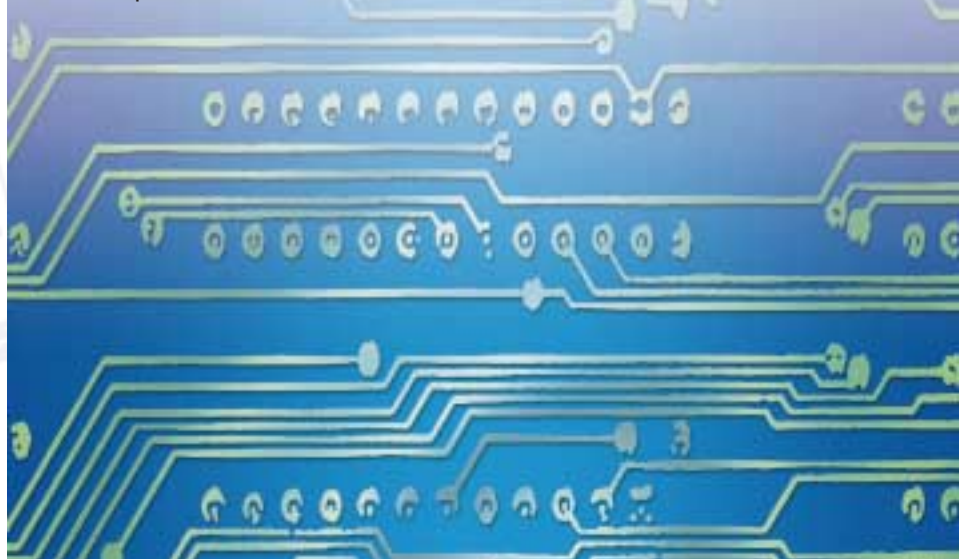
Jim Vortherms, a Project Manager, has been involved in developing vision systems for a variety of different uses. For example, in a recent project for an engine valve manufacturing group who wanted to offer their customer a way of measuring valves to ensure outgoing pallets for shipping were all loaded with the exact same-size parts.

"A vision system is crucial in that kind of quality-control application," Vortherms says. "It's more precise and faster than hand inspection."

Some of the uses Interstates has developed include verifying alignment of labels on products on a production line to ensure that they are legible and applied correctly and devising a system for a recycler to sort bottles and other packaging based on color and transparency. The systems also can be designed to interface with computers for monitoring and programming.

But, as Vander Plaats points out, it's not simply Interstates' ingenuity with vision systems that makes a difference for customers. "We have the experience and expertise not only to develop vision applications, but to integrate them with other control systems," he says. "That's the real key to improving efficiency."

To learn more about Vision Systems contact Jim Vortherms at (605) 988-0833 x102 or Preston Vander Plaats at (712) 722-1663 x191.



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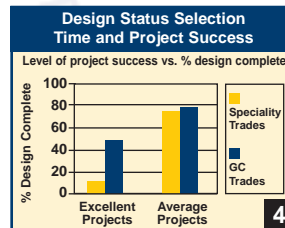
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- **Interstates Electric Prepares Plant for New General Mills Cookie Line**



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- **From Troubleshooting to Training**



Source: Construction Industry Institute

- **More Project Success Bang... For Your Speciality Contractor Buck**

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