



ACI Worldwide facility in Omaha, Nebraska

Omaha Regional Office Wins “PROJECT OF THE YEAR” Award from ABC Cornhusker

Interstates’ Omaha Regional Office has been inducted into an exclusive club; they are the proud recipients of an ABC Cornhusker “Project of the Year” award for their work on ACI Worldwide’s facility in Omaha, Nebraska.

The ACI Worldwide project presented unique opportunities for the Interstates team. Some challenges on this project included:

Mother Nature – In June, a tornado ripped through the Omaha area and damaged the ACI Worldwide building as it was still under construction. Interstates and the rest of the crews onsite were just one week from finishing up their work on the project. Immediately, the crews scheduled a meeting to determine how they could work together and repair the damage. Efforts were successful. ACI Worldwide employees were able to move into their building by the first of August.

Building Location – The project was located in the middle of an open field with no existing access to utilities. The crew had to get temporary power and other utilities to the site to begin construction on the project. Overhead power line installation was precisely located as to not affect the mobility of on-site equipment. There were no existing roads, so

MORE ARC FLASH RULES?

Navigating the 2009 Changes in NFPA 70E

By: Brent Kooiman PE, and Dave Crumrine PE, PMP, DBIA

Keeping people safe has always been a priority. Safety rules and regulations continually change, but the results have led to more people going home safely.

The writers behind the now-published and newly active “NFPA 70E – 2009 – Electrical Safety in the Workplace Standard” have clearly spent time thinking through what it takes to keep electrical workers safe. NFPA 70E is the standard for electrical hazards, and OSHA is already enforcing the new requirements. If followed, 2009-70E will reduce the number of critical injuries to electrical workers.

Although some version of the NFPA 70E has been around for many years - efforts to first address arc flash started in 1995 - its implementation has been slow and spotty. Moving forward, expect enforcement of the standard to be ramped up due to increased awareness of arc flash hazards and changes in government administration.

Some of these changes are significantly different than earlier requirements (and practice). This article serves to point out the key changes in the new standard. It’s important for owners and project players

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MAXIMIZE YOUR ELECTRICAL INVESTMENT

IEC OR NEMA STARTERS

By: Randy Stander, Jake Ten Haken PE, and Doug Post PE

If you're like many of our clients, you wonder whether to use IEC Motor Starter Panels or NEMA Motor Control Centers (MCCs) in your facility. Interstates' professionals are often asked about the pros and cons to each approach. Here are some suggestions on which starter might be right for your application.

Are there differences between IEC and NEMA starters?

The perception seems to be that IEC starters are not as good as NEMA starters. Actually, both starters are of good quality provided they are applied and sized correctly. IEC starters are sized based on expected load and the expected number of on/off cycles in their lifetime of use. This means a 5hp motor would be matched with a 5hp IEC starter that is duty-rated for the intended number of on/off cycles.

On the other hand, a NEMA starter is sized for a range of horsepower and is robust enough for nearly any number of on/off cycles. For example, a 5hp motor would be matched with a size 1 starter that could also be matched up to a 10hp motor. One could argue that NEMA styles are oversized in many of their applications.

Since IEC starters are typically sized closer to the actual motor served, they will likely cost less when connected to small motors. NEMA starters offer more flexibility when changing motor sizes within the range of applicable horsepower.

Should I only use IEC starters? Is there space savings if I do so?

That depends on your facility's needs. Our experience suggests IEC starter panels become less practical when larger than 400A, whereas NEMA MCCs can be as large as 2,000A. Special and larger (~30hp and up)



NEMA MCCs

IEC starter types take up a lot of room and are more difficult to install into IEC style enclosures. At the 30hp threshold, the space saving advantages of IEC starters begin to diminish.

Does separation of systems become more available with IEC starters or MCCs?

It is easier to break systems (receiving, processing, loadout, etc.) into individual IEC starter panels than into individual MCCs. This is due to the smaller ampacity size of IEC starter panels.

However, more feeder circuits and circuit breakers must be installed to connect the IEC starter panels. Additional switchboard breakers, enclosures, main disconnects, and feeders drive up the cost of using IEC style starter cabinets.

Are IEC style cabinets safer than traditional MCCs?

Safety is maximized when operators and maintenance personnel comply with Lockout/Tagout procedures. Consider typical steps necessary to lock-out the two starter types (Your facility's safety program may vary from this.):

To lock one starter in an IEC style panel, an operator may need to:

1. Suit up in appropriate PPE.
2. Turn off the main disconnect that is adjacent to the IEC panel. NOTE: This shuts down all motors in the panel.
3. Lock the disconnect in open position.
4. Open the starter enclosure door.
5. Lock out the desired starter.
6. Close the starter enclosure door.
7. Remove lock and re-energize the main disconnect.
8. Remove PPE.

For MCC panels, the person may need to:

1. Turn the individual starter to the "off" position. NOTE: Only one motor is turned off.
2. Lock the disconnect in the open position.

With IEC starter panels, the operator will most likely need to suit up with PPE just to lock out an individual starter inside the enclosure, whereas with an MCC they may not



IEC Motor Starter Protectors

need to do this since each starter has a disconnect external to the starter enclosure.

In our opinion, MCC style cabinets are safer than IEC cabinets. IEC provides personnel more avenues for bypassing safety procedures. The pressure to keep the plant running may also influence an operator's decision not to shut down systems to work on only one starter.

The recommended approaches are likely to vary depending on your facility's motor load, your preferred starter vendor, and on the fluctuating electrical equipment marketplace. If you would like help assessing the trade-offs for your unique situation, please contact Randy Stander (712)722-1664 ext. 306 or randy.stander@interstates.com, or contact Jake Ten Haken (712)722-1663 ext.157 or jake.tenhaken@interstates.com.

CASE STUDY

We have completed two cost comparisons using a combination of IEC/MCC compared against traditional NEMA MCC starters.

Comparison #01

1. Provide IEC starter panels for all standard type FVNR starters up to and including 30HP (no VFDs or solid state starters).
2. Provide MCCs for standard type FVNR starters for 40HP and above (all VFDs and all soft starters).

RESULTS: Using IEC starters saved 10% compared to NEMA MCCs

Comparison #02

1. Provide IEC starter panels for all standard type FVNR starters up to and including 30HP and zero to -30HP VFDs (no solid state starters).
2. Provide MCCs for standard type FVNR starters for 40HP and above, VFDs rated 40HP and above, and all soft starters.

RESULTS: Using IEC starter panels saved 15% compared to NEMA MCCs.

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deliveries had to be scheduled around weather and other trades. Often, semis would line up and have to coordinate with other equipment just to get in. Interstates was involved in scheduling from the beginning, so these obstacles did not delay progress on the job.

Security Needs - ACI Worldwide needed a security system that maintained a high level of protection for their facility and could grow along with their company. Interstates' Omaha

Regional Office was able to help them, as they had recently added integrated video and access control system services to further diversify their project deliveries.

"Interstates is ahead of the curve," states Tom Timperley, integrated systems manager for Interstates. "We're providing high end, software driven solutions that will easily expand and evolve as our clients' needs grow."

"It's not as hard to sell the first project, but it's the way our field personnel perform and their appearance that sells the repeat business," states Robert Bruegman, Omaha Regional Office's division manager. "This project is a great example of that. If it weren't for our talented field personnel, we would not have won this award. We are incredibly pleased to be named 'Project of the Year' by ABC."



Security Panels



Feeding Big Wire



Accepting the ABC Award: Robert Bruegman; Sam Schuman; Larry Den Herder; Troy Britton; Bill Kilmer, ABC NE president; and Lee Heitman

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NEMA MCCs

to be familiar with the updated requirements to ensure electrical safety and reduce risk.

Not all the changes can be addressed in the context of this newsletter, but it's important to touch on the key items.

KEY CHANGES SINCE NFPA 70E (2004):

1. Makes clear that the standard applies not just for installation (construction), but for any work around electricity.
2. Requires an updated arc flash analysis be done whenever a major modification or renovation takes place and once every five years to account for everything from a utility change you may not be aware of, to maintenance items such as fuse changes and breaker settings.
3. Upgrades the standard to now require that specific energy levels be added to equipment Arc Flash labels; likely calling for a specific analysis to be done.

4. Upgrades the PPE (Personal Protective Equipment) requirements:
 - a. PPE must be arc rated (AR), not just fire resistant (FR) rated.
 - b. Hair & beardnets need to be arc rated.
 - c. An arc-rated balaclava with face shield or special arc-rated goggles is now an acceptable alternate to a hood.
 - d. Hearing protection has been added.
 - e. Face shields for Hazard Category 1 are now required.
 - f. Long jackets or "smocks" will no longer meet the arc flash PPE requirement. Pants or another solution must be used to protect the lower body.
 - g. Arc-rated rainwear, jackets, and parkas have new requirements.
5. Requires documentation and auditing of an electrical safety program.
6. Clarifies the relationships and responsibilities of contractors, outside service personnel, and host employers (GCs and owners).
7. Requires specific, documented, training and retraining for each qualified employee. CPR is required yearly.
8. Adds requirements to ensure employees don't enter "look a like" equipment.

COMING SOON

Standard writers and educators familiar with this issue have projected other changes will likely be coming. It may be helpful to be

thinking of these issues as you establish revised policies and processes in your facility:

1. Energized work will continue to be strongly discouraged. Few exceptions are expected unless for life safety or utility interruption issues. The burden of showing the "need" will shift to those asking for the work to be done energized (the client) rather than those doing the work. "No Energized Work" will become the rule, rather than the exception.
2. The current Hazard/Risk tables could be removed or changed dramatically to demand a specific arc flash analysis be performed or to require more restrictive PPE.
3. The 2011 NEC (Electrical Code itself) may require specific arc flash values on labels as well, leading to more frequent enforcement by local authorities (rather than just OSHA as is under 2009 NFPA 70E).

Keeping people safe is the ultimate goal. Interstates supports these efforts and celebrates as more and more industry professionals go home safely. We stand ready to partner with our clients to make these changes more quickly.

For a more detailed look at the new NFPA 70E requirements, please visit our website www.interstates.com/resources_safety.html and view the full white paper. If you'd like to know more about how we can help your people go home safely, please contact Brent Kooiman at brent.kooiman@interstates.com or call (712)722-1664 ext. 302.

KEN MCQUISTEN TO RETIRE AFTER TWO DECADES WITH INTERSTATES

VALUED TEAM MEMBER ENDS REMARKABLE CAREER



Jack Woelber and Ken McQuisten

As Ken McQuisten prepares for retirement after twenty years with Interstates, we know a great employee is ending a remarkable career full of experience and dedication to the company and his clients.

Ken started with Interstates in 1988 as an electrical engineer. Back then, Interstates was smaller (about 25 people in the office) and everyone held multiple roles. Ken was no exception, doing work in programming, power engineering, and control engineering. Ken remembers when Interstates' founder, John A. Franken, pulled eight people from the corporate office, including John A. himself, to travel to California and help finish up a project for a customer. "It was quite something to see all of the office staff members running conduit and pulling wire," Ken recalls.

The company grew and people became more specialized in their positions. Ken moved to doing project management full-time. That was the position he held for nearly 15 years until his retirement this month. During his time with Interstates Ken developed many valued relationships with his clients. They speak well of Ken's high standards and commitment to delivering high quality projects. One client, Mike Long, president of Bay State Milling, has said, "I wish all vendors were like Ken. He was a great ambassador for Interstates and consistently went beyond what was expected on a project. His signature is all over Bay State Milling's plants from coast to coast."

Ken has played a role in Bay State's and other clients' successful projects during his career. Those relationships took him around the world. One of his trips really stands out as an unforgettable adventure for Ken. He recalls, "While in China I saw the Great Wall, Hong

Kong, and many other sites. However, living conditions were not very comfortable. It was Thanksgiving and the weather was only 20 degrees. We were allowed only two hours of heat and hot water in the morning and at night. We tried to always be in bed by the time the heat turned off at night."

The temperature isn't the only thing

Ken remembers about his trip to China. He shares, "I'll never forget the food. The main course would be rice, crispy fried fish, and chicken feet—no breasts, only feet." Ken sums up his traveling experiences, saying, "There are trips to remember and trips to forget, but it has been a joy working with the people of Interstates. I will miss it."

"Ken was a great ambassador for Interstates and consistently went beyond what was expected on a project." – Mike Long, president of Bay State Milling

"Interstates is saying goodbye to a valued team member," states Jack Woelber, president of Interstates Control Systems. "Ken was one of the first official ICSI employees, and he has been an important part of our history and a great asset to our organization. Ken's expertise and dedication to our customers sets the example for others. We wish him well in his retirement."

The screenshot shows the Interstates website with a navigation bar at the top containing links for COMPANY PROFILE, SERVICES, CAREERS, NEWS, RESOURCES, CONTACT, and SITE MAP. The main content area features a large image of an industrial silo and several text blocks: a safety message, a 'Learn More About Interstates' link, 'GET TO KNOW INTERSTATES' with 'Our Experience' text, 'JOIN OUR TEAM' with 'Working for Interstates' text, 'The Interstates Companies' link, and 'OUR SERVICES' with icons for ENGINEERING, CONSTRUCTION, CONTROL SYSTEMS, MANUFACTURING, and INSTRUMENTATION. A large blue banner at the bottom right says 'Visit Us on the Web at www.interstates.com'.

INTERSTATES KEEPS REPUTATION AS “ALL THINGS” ELECTRIC WITH ADDITION OF COMMERCIAL BUILDING AUTOMATION SERVICES



Interstates Control Systems has added another powerful addition to their lineup of client services. They are now offering building automation services to the commercial and industrial sectors. Clients of Interstates can have their commercial facilities wired for comfort, security, and energy efficiency by the experts.

“Imagine entering your building access code after-hours, and when the system recognizes your code, it immediately turns on the lights and sets the ambient temperature for your work area only. The technology is already there, and we are offering it to our clients,” explains Eric Oordt, project engineer for Interstates Control Systems.

Interstates has done work like this for years for industrial facilities, and commercial automation requires a similar skill set. Jake Ten Haken, director of engineering for ICSI states, “We’re an integrator

that puts together solutions made of many products. We know what’s out there and the trends in the marketplace, and we help the client determine what makes the most sense for their facility.” Ten Haken adds, “Client input always drives the design process.”

Interstates is known for its integrated project delivery, and this service came about in an effort to partner with the regional offices. “Our regional offices are doing more commercial work, and we saw this as an opportunity to support them. We benefit by staying diverse and giving our team members technical opportunities. This complements our industrial capabilities while allowing us to serve clients in the commercial sector,” states Oordt. “Most importantly, clients benefit by having our expertise and manpower in the market.”

Clients of Interstates can have their commercial facilities wired for comfort, security, and energy efficiency by the experts.

Interstates has fully staffed engineering, programming, service, and information technology departments that are ready to support clients through the process. The goal is to deliver efficient technology and performance. Almost any existing system or hardware can be integrated. Ten Haken explains, “Customers don’t have to be tied to us. We’ll give them a solution which will allow anyone to support them long term, but of course we do want to build a relationship with them that will last for years to come.”

“The saying ‘Interstates does all things electric’ has never been more real than now,” says Oordt. “Anything associated with electrical and control is within our expertise. We are truly single source.”

SHOULD YOU CONSIDER AUTOMATING YOUR HVAC AND SECURITY SYSTEM?

Manage Energy:

- Ease wild temperature swings that bloat your energy bill
- Go “Green” without sacrificing comfort
- Optimize energy demands and trend usage

Save Time:

- Remotely access the system through a secure internet connection
- Prevent downtime by scheduling routine maintenance via email
- Manage alarms, trend logs, and schedules
- Integrate seamlessly with third-party vendor systems
- Install systems that will support future expansions

Stay in Touch With Your Building:

- Restrict who can access areas of a building
- Get alarms through a mobile device or email
- Send emergency alerts to key personnel and service organizations

UNDERSTANDING NEEDS ► DELIVERING RESULTS

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INTERSTATES

The Interstates Companies offer full service, design-build electrical contracting, engineering, instrumentation, and control systems on a worldwide basis. Corporate offices are located in Sioux Center, IA, with regional offices in Sioux Falls, SD; Omaha, NE; Nashville, TN; Fort Collins, CO; and Casa Grande, AZ.

LOOK INSIDE to see some of the innovative and cost saving solutions we have brought to our customers' projects.

For more information, visit www.interstates.com.



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