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A QUARTERLY INDUSTRY PUBLICATION

JOB SCOPE

PIPING • PLUMBING • AIR CONDITIONING

FOR KEY FIELD AND OFFICE PEOPLE IN MECHANICAL CONTRACTING • Fall 2004 •

Ferris State's Granger Center Brings A New Dimension To Learning By Doing

By Rose Szwed

Every student worries whether their education is really preparing them to work when they get out into the "real world." The question, "Can I really afford the time to get a college degree?" is asked at some point.

The above concern found its way into the design criteria for Ferris State University's (FSU) new Granger Center for Construction and HVACR. When the 45,000-square-foot addition to the former Construction Technology Center opened in the fall of 2003, it more than doubled the learning space devoted to the school's Construction Technology Management and HVACR departments. The payoff for students and teachers has been not only a bigger facility but a better education infused with reality — as in real hands-on projects. The Granger Center was a big step for FSU, which already was recognized as one of the country's leading HVACR schools.

The new building, located on the 600-acre campus in Big Rapids, Mich., features large new

(Continued on page 6)

In the hands-on lab at Ferris State University's Granger Center, (left to right) Jason Alder and Tom Pennington troubleshoot a problem with a commercial ice machine.

Shrinking Local Market Convinces One Mechanical Contractor To Hit The Road

By Don Doherty

Regardless of what kind of ride you've had through the besieged construction business the past few years — from a little bumpy to deadly scary — for many of us life has changed. But whoever guaranteed that the future would be rock-steady, or a constant flowing fountain of opportunity and work? And who in this industry

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Discussing the calibration of building loads for student tests are (left to right) Steve Allen, United Association, Tom Crandell, director of corporate and professional services, and Mike Feutz, HVACR Department chair at Ferris State University.

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Commentary

"Moments that Matter"

By Mark Matteson

Many years ago, I was a first-year apprentice assigned the task of pressure washing a set of condensing coils on the roof of a grocery store on Capital Hill in Seattle, an upscale part of town. It was a 90-degree day, in late August. To make matters worse, it was a Friday around 4:30 p.m. I was wet, dirty, tired and I was anxious to get home, knowing full well I had at least another hour to finish up.

An elderly gentleman in coveralls and an old and worn straw hat approached me as I came down the ladder. "Watcha' doin,' sonny?" he asked. At that moment, it would have been easy to dismiss his inquiry and say something curt or rude. After all, I was tired. However, I decided to smile and explain what and why I was doing what I was doing.

His body language told me he appreciated my gesture. He then exclaimed, "That's great, I'm glad you're doing this. It's important. You see, my son runs the store for me. In fact, I own the whole block. Keep up the good work!"

On the drive home, it occurred to me, "You just never know!" He didn't look like a millionaire. It was a moment that mattered from a business perspective.

A moment that matters is the dozens of daily interactions that occur when we come in contact with our customers. We sometimes forget that it costs $7 to GET a new customer, but only $1 to KEEP one!

Keeping customers delighted and letting them know how valuable they are is as rain is to dry flowers. Great service is communicated from the top of the organization on an ongoing basis. It is rewarded and discussed through stories that become legendary internally. Appreciating the customer is everyone's responsibility. Great service means asking great questions in a moment that matters, like:

"What will it take to make you happy?"

"What would you like us to do?"

"You have a right to feel the way you do. How can we make it right?"

Great service means being flexible and willing to change and never being content with the status quo. It means continuously investing in education and growing people. It means guarding against the twin thieves of *arrogance* and *complacency*. Great service means treating every person in your organization with dignity and respect. Those "Moments that Matter" will, in the long term, make or break your company.

USA Today carried a story that headlined: "Bank gets $2 million dollar lesson." It began when John Barrier went to Old National Bank in Spokane, Wash., to cash a $100 check. When Barrier tried to get his parking slip validated to save 60 cents, a receptionist refused, saying he hadn't conducted a transaction. "She said you have to make a deposit," Barrier said.

"We sometimes forget that it costs $7 to GET a new customer, but only $1 to KEEP one!"

"I told her I'm considered a substantial depositor and she looked at me like…well." He asked to see the manager, who also refused to stamp the ticket. Barrier went to bank headquarters vowing to withdraw his $2 million-plus unless the manager apologized. No call came. "So the next day I went over and the first amount I took out was $1 million. But if you have $100 or $1 million," he says, "I think they owe you the courtesy of stamping a ticket."

I wonder if John Barrier was wearing a straw hat and coveralls. There are many days I don't feel like providing great service. I'd rather take a nap. But you know, you just never know, when a Moment…will Matter!

Mark Matteson is a speaker, author and consultant to business on topics ranging from communication to sales. His company, Pinnacle Service Group, Inc., is located at 6722 163rd Place SW, Lynnwood, WA 98037. Toll Free 877.672.2001. Contact Mark at mark@mattesonavenue.com or go to www.MattesonAvenue.com and sign up the free E-Zine and receive a free E-book.

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It's a Small World

Local 597's Bill Hite Elected Interim UA General President

The United Association recently announced the appointment of William P. Hite, an esteemed member of Local 597, as interim General President of the UA. He takes over the international union's top post for Martin J. Maddaloni, who retired Dec. 1, 2004. Hite's appointment was confirmed at a special meeting of the UA's General Executive Board, where he was elected to serve through the remainder of the current term, which ends Dec. 31, 2006.

William P. Hite

Hite is a 3rd-generation pipe fitter and UA member. His grandfather, who joined the union in 1901, preceded him — as did his father who in 1937 became a member of the first apprentice class since the Great Depression. Bill became an apprentice in Chicago's Local 597 on Jan. 1, 1968, and a journeyman in 1972. All three of his brothers are also members of Local 597. His son, Bill Hite Jr., is a 4th-generation pipe fitter and journeyman in Local 597.

After some 14 years at his craft, primarily as a supervisor in the heavy industrial field, Hite was elected as a delegate from Local 597 to the Chicago Federation of Labor. He served in that position until 1986, when he was elected a business representative of the local.

In 1993, Hite was named assistant business manager of Local 597. Shortly afterward, he also became L.U. 597's financial secretary-treasurer. He has served as a trustee for various Local 597 funds, including health and welfare, training, and pensions. During his tenure, he represented Local 597 at the Chicago Building Trades, the Will and Grundy County Building Trades, and the DuPage County Building Trades.

Bill Hite was one of 32 new international representatives elected at the 35th Constitutional Convention held in August 1996, in Las Vegas. In June 1999, he was appointed Administrative Assistant to the General President. Two years later, at the 2001 convention, he became Assistant General President of the UA.

Bill and his wife Pat have two children, Bill Jr. and Chrissy, and several grandchildren. He is deeply involved in his church and community. Through the years, Bill Hite has written many articles and columns that have appeared in *JobScope*.

Also retiring on Dec. 1, 2004, was General Secretary-Treasurer Thomas H. Patchell. The UA General Executive Board asked Patrick Perno to fill his position. Finally, Stephen F. Kelly was asked to serve as Assistant General President.

"STARs" Recognized at MSCA Conference

STAR-qualified contractors were recognized at the opening session of the Mechanical Service Contractors of America (MSCA)'s 19th annual conference, Oct. 17-20, in Santa Ana Pueblo, N.M.

To earn MSCA's STAR rating, contractors must provide safety training for all employees, implement a service safety program, maintain an outstanding safety record, establish an inventory control program, maintain excellent customer service standards, and employ UA STAR-certified technicians.

The following 20 companies were honored:

- Adrian Mechanical Services Co., Adrian, MI
- Air-Ex Air Conditioning Inc., Pomona, CA
- Airtech Air Conditioning, Miami, FL
- Cal-Air, Inc., Whittier, CA
- Cal-Air, Inc., Sacramento, CA
- Commercial Refrigeration Service Corp./Commercial Mechanical Services, Rockford, IL
- D.P. Wolff, Inc., Hawthorne, NY
- ENTEC Services, Inc., Peoria, IL
- F.J. Murphy & Son, Inc., Springfield, IL
- Hurst Industries, Belmont, MI
- Indoor Environmental Services, Sacramento, CA
- J.F. Ahern Company, Menomonee Falls, WI
- John E. Green Company, Lansing, MI
- Mechanical Inc., Freeport, IL
- Soder Mechanical, Inc., Tulsa, OK
- Stroh Corporation, Des Moines, IA
- The Enterprise Corporation, Twinsburg, OH
- Thermalair, Anaheim, CA
- Thermodyne Mechanical Services, Inc., Northbrook, IL
- W.E. Bowers & Associates, Inc., Beltsville, MD

NCPWB Welcomes New Officers

The National Certified Pipe Welding Bureau (NCPWB), a subsidiary of the Mechanical Contractors Association of America, Inc. (MCAA), elected Bob J. Silvia as chairman of its Board of Trustees at a recent board meeting. Silvia is the president of Process Engineers & Constructors, Inc. in Warwick, R.I. He has been an active member of the Board since 1993 and served two years as the Chairman of the NCPWB Technical Committee.

Silvia has more than 28 years of experience in the areas of project management and administration, purchasing, scheduling, field management, and development and implementation of welding procedure specifications.

The board also elected Robert J. Durr, Jr. to serve as the new Technical Committee Chairman. Durr is the president of Durr Mechanical Contracting, Inc. in New York, N.Y. He began his career in the mechanical contracting industry in 1979. He has served as the chairman of the Greater New York Chapter NCPWB.

At the national level, Durr is a member of the Labor Estimating Manual Committee and the NCPWB Board of Trustees. He is licensed as a Master Fire Suppression Piping Contractor as well as a Refrigeration Transition and Recovery Contractor Universal.

Women Talk About Trades

(Left to right) Janice Robinson and Kersie Taylor listen to Laura Bass, of UA Local 597, describe some of the certified welding training she is receiving as an apprentice pipe fitter in the union. The two visitors were among more than 20 women who recently toured the L.U. 597 training facility during a special open house to learn about careers in construction.

Construction is not an easy job, but it's interesting work for good pay and a career path that is more open now than ever to women. This was one of the messages heard by the visitors, who are enrolled in a 10-week program of *Chicago Women in Trades* designed to introduce them to the building trades and help prepare them for apprenticeship. Their guides on this day were seven women apprentice pipe fitters of Local 597, who were supported by a few instructors.

Robert J. Silvia

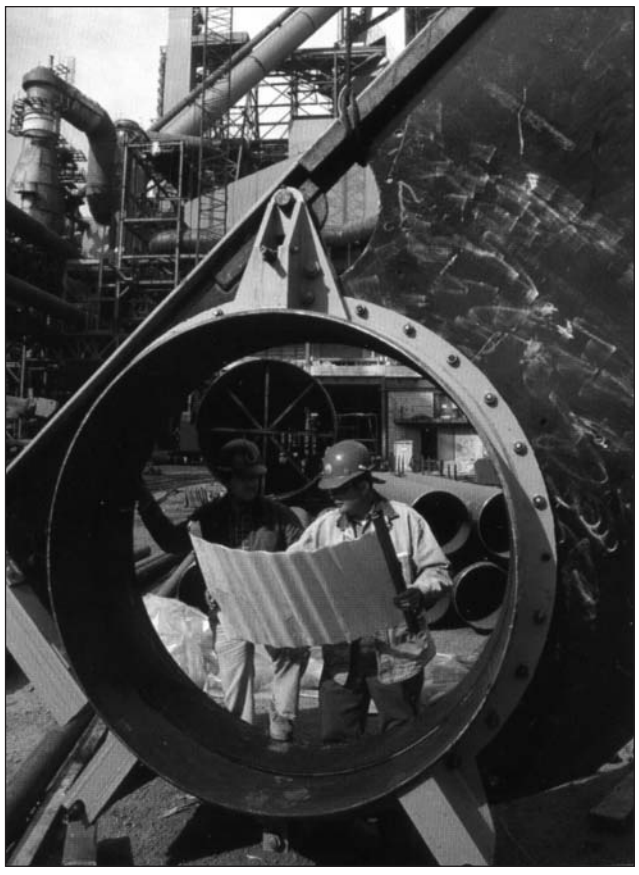
Robert J. Durr, Jr.

McCartin *(Continued from page 1)*

is unfamiliar with change? As one mechanical contractor put it, "Pipe fitter journeymen are resilient and adaptable to change."

Bartlett McCartin III, the contractor who said it, has watched the changes as an apprentice and journeyman pipe fitter in his local union and later as a superintendent, estimator and executive for the firm his father and grandfather led before he took the reins in 2000.

The Calumet District of northwest Indiana, wrapped around the southern shore of Lake Michigan, is a piping contractor's dream: a virtual smorgasbord of large industry with steel mills, oil refineries, chemical plants and hundreds of large manufacturing companies whose production relies on, even flows through, miles and miles of pipe. One can drive for 30 minutes in every direction and pass one big industrial complex after another. If a contractor can't find work here, he can't find it anywhere — and those who get lucky here, one wonders, won't need to look anywhere else.



McCartin McAuliffe is reshaping their company into one that can travel anywhere, exporting their supervision experience to build projects they really understand far away from their typical area.

McCartin McAuliffe Mechanical Contractor, Inc. was one of the fortunate ones in this part of the industrial belt. The thirty-something-year-old Bartlett III can recite from a long list of plants where his father and grandfather had a major hand in piping projects, stretching back as far as 50 years. During that time, when the shingle over the front door of one customer changed, the contractor succeeded in making customers of the new tenant. There is the soap factory that once processed breakfast syrup. They've found many more new customers as old ones changed hands in the steel mills, refineries and an electric utility company.

McCartin McAuliffe's roots were planted in 1916 as a small, one-man residential plumbing shop that opened in the basement of Henry F. McAuliffe. It quickly discovered the fast lane to expansion, branching out into industrial construction and maintenance. In 1926, the company moved to its first commercial address, near the firm's current building in Hammond, Ind. Bartlett McCartin I, who in the 1930s worked for the firm as a fitter foreman, succeeded McAuliffe as president in 1960. Today, McCartin McAuliffe handles large-scale projects for customers in the power, petrochemical, steel, pharmaceutical and chemical industries. It's boundaries reach way beyond northwest Indiana, into several other states, and hope to stretch further. The company now operates satellite offices in Las Vegas, St. Louis, Detroit, and south Florida. It is among the "Top 400 Contractors" list published by *Engineering News Record (ENR)* magazine.

Shifting Market

It's been interesting to watch how things have changed, McCartin said. For years, all the big piping jobs were in the chemical plants and steel mills. "Now that's completely gone, transitioned away. Steel is gone," he said. Now the petrochemical and power industries are the area's main sources of work.

A key to keeping several of their customers has been the contractor's success at staying in step with their changing customers. While one eye watches the paradigm shift, the other one carefully reevaluates their supervision and technical skills.

"Our people's skills sets have to change because they are used to doing coke battery work and coke oven work, battery limit piping and line piping in the mills," McCartin said. "It's a big shift in the environment they are working in. Working a pickle line in a steel mill in comparison to a crude line in a refinery are such dramatically different environments."

The contractor, however, is careful not to pursue new customers at the expense of old ones. "Ninety-six percent of the business we do is repeat business," McCartin said. However, they are not counting on their long-time customers to carry them or, for that matter, the northwest Indiana corridor to sustain the company and their 700 employees over the long haul. A few years ago, the young, ambitious CEO decided it was time to extend the company's reach outside of Indiana and the Chicago area.

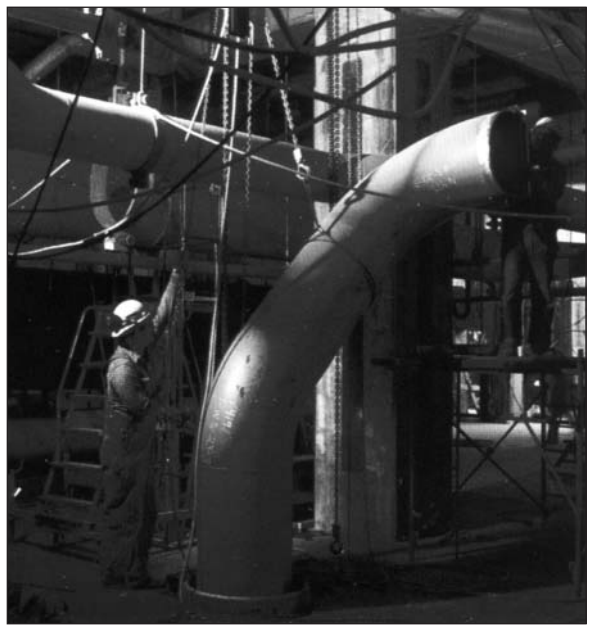
"We saw the writing on the wall when we weren't keeping 300 people in the steel mills anymore. Now there are five bidders for every $25,000 job and everyone is trying to cut each other's throat," McCartin said.

"We are not opening a new office, chasing Dodge reports and bidding the world," McCartin explained. Rather, they are carefully remolding their operation into one that can travel anywhere a customer asks them to go. "We provide the expertise and supervision to make their project work," he said.

The emphasis, however, is put on *supervision* as the expertise mostly comes from journeymen of the Local unions wherever they go. It's the supervisory experience they can put together from past successes that can be packaged and shipped to new areas where similar large projects are needed. This is what's attractive to their customers.

Taking your show on the road for the first time would seem to open up a new world of possibilities for adventure (and misadventure if you're not careful). So far, it's been a learning experience for everyone.

"The feedback has been very interesting; some of it is a testament, I think, to the training, work ethic and quality craftsmen we have here in Local 597 and in this region," McCartin said. In Ashland, Ky., for example, where they helped build an



One of the challenges for the contractor has been changing their skill sets to match a changing customer base.

oil refinery, the refinery and a steel mill might constitute 90 percent of the industrial sector, even though they are only a quarter of the size of any found up north. "It's going to reflect differently on things like training, availability of people, and so on," he said. "It's not to say it's worse.

Responsibility No. 1: *The People*

Bartlett McCartin III followed his father (Bartlett Jr.) and grandfather (Bartlett) into the business and into the United Association as a pipe fitter. By the time of his apprenticeship in the union, the youngest Bartlett already had years of experience in the business. It was not something he was expected to do.

Bartlett McCartin III

"It wasn't because I had to; I wanted it," he said. At the age of 12, he worked in the company fab shop sweeping floors and cleaning machines.

"A 12-year-old boy around construction guys, big equipment, swearing, getting dirty. I grew up wanting to become my father, my grandfather. They were my heroes."

Bartlett had other relatives who made their mark also in the industry. His uncles, Gene and Francis McCartin, were also union pipe fitters. The former had an executive-level position in the family business; the latter meanwhile distinguished himself as the business manager of Local 597 for more than four decades. And John T. McCartin, the father of Gene, Francis and Bartlett I, served as assistant general president of the United Association.

As a kid, Bartlett III recalls many family get-togethers at a popular south side restaurant. "All the men sat on one side of the table, women on the other. I'd sit down at the end, between them, and listen to these guys tell stories. I was mesmerized by that," he said.

While growing up, he had other passions and other chances at a different life. For example, as a college student at Pepperdine University, near Los Angeles, Bartlett seriously considered a future in politics.

He's also carried around a lifelong passion for firefighting. For a dozen years he has enjoyed his second life, as a volunteer firefighter involved in search and rescue work. "I love it; I absolutely love it," he proclaimed. "These people are the salt of the earth."

Among his experiences in this capacity, Bartlett was part of a local 35-man volunteer team cobbled together after the nation's tragedy on Sept. 11, 2001, that traveled to New York City and worked as rescuers at "Ground Zero" for six days immediately after the fall of the World Trade Center there.

After his apprenticeship and college, Bartlett spent several years in the family business as a supervisor, then estimator, then marketing person. One day, during what he thought was just a game of golf and later a drink enjoyed with his father, Bartlett was promoted again.

He explained: "He sits across from me. I'm waiting for some fatherly advice. Instead he asks, 'You want to play some cards?'

"So we are playing gin, having a drink and not talking about work at all. All the sudden he looks up at me and says, 'You know, you're a young man and you're going to have a title after your name. There are some nice things that go along with that. I'm proud of you, you've earned it.'

"It was Friday night. He said, 'Go out this weekend and get a couple of new suits, because you are going to need them. Take your wife out to a nice dinner and celebrate a little. Feel high on the horse, it's a big thing. Then Monday morning, do you know what I want you to do with all of that?'

"I said, no, what's that? He said, 'I want you to stick all that up you're a__! Because on Monday morning when you walk in here you are now responsible for every single person who works for you and their families. That is what you just signed up for. That's the responsibility and legacy that you carry on from your grandfather to me to you.' "

On Monday morning, Bartlett III became president of McCartin McAuliffe. The baton was passed.

Bartlett Jr. was in the mechanical contracting business for 44 years before retiring. His father led the business before him. To both, their employees were the cornerstone of the business, so there simply was no way to take care of the business without taking care of its people first. "They were not only liked by their people but adored," explained Bartlett III.

To the new CEO, the people under him will always be responsibility number one.

"It's experience, experience, experience. That's what the customers are looking for. And it's what breeds this type of expertise."

"When you branch out into areas that just don't have the same level of industry, it gives you a different perspective," McCartin said. They've learned how to work proactively with the line supervision to get the jobs done, and to bring in the necessary skills sets required to do the work. To accomplish that, a level of trust must be there — and how sticky can this be for project supervisors and workers from different work cultures and parts of the country?

"You don't go in there like the big boss. You can't do that," said Fred Steinbach, a piping superintendent for McCartin McAuliffe who has worked away from home on several jobs. He has found a better approach than the iron fist-way of running the job, striving instead to build trust and teamwork. The process begins in a meeting where each side finds out the expectations of the other, then works toward a successful blending of the two.

"You build the sense of feeling that everyone is involved with the whole process of a project," Steinbach said. This works better than the rigid, this-is-what-you-have-to-do mindset, which is never accepted well.

So far, gaining the trust of the local people hasn't been overwhelming or insurmountable, according to McCartin. For one thing, supervisors and workers, regardless of where they are from, are members of the same union who have worked their way up the ranks and understand the situation from each other's viewpoint. "When we make decisions, we are careful not to come off looking like one of the big nationals with a *cowboy mentality* that lets everybody know, 'By God, this is how things are going to be done.' " Rather, McCartin said their aim is to blend in, "taking the local folks who are very capable of doing the work and combining them with outside, seasoned experience."

The Kentucky refinery job lasted a little more than a year and employed up to 1,200 people. About 60 percent of the workforce was from UA Local Union in whose jurisdiction the plant was built. Steinbach, who was in charge during two phases of the project, said that the job was planned and organized no differently than any other; however, some of steps become a little trickier because of the distance. One of them is the procurement of equipment, material and tools.

The Distance Challenge

"When you are out of town and the base is back here, being efficient is important," Steinbach

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Granger *(Continued from page 1)*

working geothermal heating and cooling systems. And now they are completely open to view and not behind or above drywall or drop ceilings, making it easier for students to trace systems from beginning to end.

End of Theory-Only Teaching

An education that is too big on theory and too short on hands-on experience doesn't fully prepare students for construction industry careers. Take it from James P. Miller, P.E., with the U.S. Army Construction Engineering Research Laboratory, in Champaign, Ill.

"Upon graduating from a major Big 10 university's mechanical engineering program in 1983, and taking a job with a Fortune 500 company as a maintenance manager, I quickly found out that there wasn't much need to solve differential equations on my new job.

"Unfortunately, I was totally unprepared for many of the tasks I faced on a daily basis. For example, I had never seen a ladder logic diagram before and had no idea how to read one. I am also embarrassed to admit that I had never heard of a chiller before and had to have someone explain what it was and what it did. I'm not downplaying the value of theoretical education, but there is a real need to infuse more reality into the curriculum," he said.

This need is at the center of FSU's HVACR engineering-technology program launched in 1984.

Made for Learning

Students learn how to apply theory through hands-on design laboratories, according to Mike Feutz, HVACR department chair at FSU. Students use a Direct Digital Controls (DDC) system to respond to environmental changes and changes in loads. They can get immediate feedback on what they did so that they can respond to real situations.

"It is an opportunity for students to work on actual systems in operation and see how properly and improperly matched systems perform," Feutz said.

"The approach here is to develop students who are systems oriented. Once they have completed their junior year of HVACR Engineering Technology, they are familiar with codes and standards and can perform several operations. They can identify system problems and handle retrofit designs and systems analysis. They can also size piping and ductwork and select proper pumps and fans.

FSU students can test, adjust and balance systems and controls. Add to that the ability to calculate heating and cooling loads, both manually and using computer software, as well as limited energy audit work. They understand control logic and have a working knowledge of pneumatic and electric control systems. Oh yes, they also know AutoCAD.

Reviewing HVACR course material are (left to right) Steve Allen, Tom Crandell and Mike Feutz.

The HVACR Department at FSU is one of 12 departments under the College of Technology. Two programs reside within the department: the *HVACR Technology Program* and the *HVACR Engineering Technology Program*.

The *HVACR Technology Program* is all about technician education. The goal is to develop professional skills and attitudes in students that will make them immediately employable upon graduation. Graduates find employment in areas such as installation, troubleshooting, service, maintenance and repair of residential and light commercial heating and cooling equipment, and commercial refrigeration equipment.

The *HVACR Engineering Technology Program* trains students to design, measure, monitor, control and maintain HVACR systems for optimum performance and energy efficiency. These graduates will specialize in building loads, need assessments, energy analysis, system selections, system design, controls and testing, adjusting and balancing.

Applied Techniques

"FSU is unique because it is a university and a community college offering both associate and bachelor degree programs. To receive a bachelors degree, you must first earn an Associates of Applied Science Degree in HVACR Technology degree. FSU wanted to increase enrollment in the associates degree program," noted Feutz.

The HVACR Engineering Technology Program was established to bridge the gap between the AAS degree technician and the mechanical engineer. The program exposes students to a variety of commercial and industrial systems as well as energy-related experiences. Students serve an internship during the summer after junior year.

At Ferris, there is a heavy emphasis on controls, but not until after students learn about basic systems and their components. It all begins with a secondary equipment-selection course, where students learn about ducting and piping systems. One-pipe, two-pipe (direct- and reverse-return), three-pipe, four-pipe and primary-secondary loops are discussed, along with their advantages, disadvantages and applications. Ducting systems include single zone, constant volume, terminal reheat, variable air volume (VAV), induction, multi-zone, dual duct and combinations.

Other courses stress control theory and application. Students are required to program a direct-digital-control (DDC) workstation to simulate actual conditions. There are 10 such workstations, all networked so that students can configure other sites remotely.

Fan and pump laws also are emphasized. Students take readings on actual equipment to deter-

Looking at a refrigerated display case condensing unit are (left to right) Rob Cairns, Steve Wiley and Mike Heavner.

mine pump-impeller size and plot fan curves. The course focuses on the selection of fans, pumps and valves based on proper sizing of pipes and ducts, as well as calculation of friction and dynamic-pressure losses through the systems, fittings, valves, dampers, filters, etc. Both hand calculation (slide rules/wheels) and computer software are used.

Students commission both hydronic and air systems, utilizing the program's boiler, 10-ton chiller, parallel pumping arrangement, and VAV and dual-duct air handlers and duct systems. A small stand-alone constant-speed fan and duct system is used for proportional balancing.

(Left to right) Mike Feutz, Steve Allen, Mike Frost, Kevin Clark, Jeremy Prielipp, Rob Carins, L.U. 174 Instructor Steve Wiley, Jason Alder, Mike Heavner, and Tom Pennington

As part of their learning, students also get some "real-world" courses. One involves a full-blown energy audit of a real building close to the campus. Students spend many lab sessions at the assigned building, measuring physical spaces; documenting wall/roof/window sections; recording nameplate data from HVAC and non-HVAC equipment; taking light-level, air-quality, electrical-consumption, demand and power-factor readings; and interviewing building occupants to learn occupancy, lighting and equipment schedules. They also collect utility bills dating back three to five years.

The Ferris Difference

The success of FSU's four-year program depends upon opportunities for students to gain practical experience in the field. "Our requirements of participating employers are simple: wages or salary is between the employer and the student but the student must be on the payroll for workman's compensation insurance purposes. Employers must provide a contact person who will be responsible for the evaluation of the student and will be willing to allow our coordinator to visit the student at his or her work site and to discuss the student's progress with the employer's designated contact person. After all, an intern is a potential future employee, and the internship experience is meant to be mutually beneficial," Feutz said.

Training takes place within environmental chambers and lab settings. There are four 12 foot x 16 foot environmental chambers which double as study carrels; these rooms can be heated or cooled by students to counteract the loads imposed by mechanical systems controlled by faculty. Other labs provide trouble-shooting experience. Faculty members simulate a problem and students must go into the system to fix it.

"The whole idea is to simulate a summer cooling load even if it is the middle of winter," Feutz said. "There are two sets of controls, one for the faculty and one for the students. We teach students how to program systems and create programs to operate the equipment."

UA Gets Involved

Contractors aren't the only ones benefiting from the new Granger Center. The facility's doors are also open to apprentices from United Association (UA) Local 174 located in nearby Coopersville, Mich., who receive some of their training at FSU. In return for using the site tuition free, Local 174 will install new systems at the school in the future. It's not the first time, however, that the United Association and FSU have collaborated on educational pursuits. The HVACR program at FSU offers a separate learning track for UA members.

Steve Allen, the UA's assistant director of training, said that FSU currently offers UA members paths to two bachelor degrees; one degree is in HVACR Engineering Technology and the other degree is for Career Technical Education.

Alton and Janice Granger helped make the new $18 million facility a reality with a generous gift. Granger Construction, which built the facility, has several family members that are FSU alumni and current students.

One of the speakers at the new building's dedication ceremony last spring, Alton Granger said: "We love this place. We've had the privilege to work here for 10-12 years. Also the industry has been very good to us, and what better way to repay an industry than to help educate its future leaders?"

Indeed, the building has many features that make it an exciting place to learn. It incorporates a wide range of mechanical systems in a large open space where everything is visible and accessible from one end to the other. Feutz said that this is the first time students are able to train on real controls and systems, as opposed to simulators. "This is a first," he said.

The United Association/Granger Center Connection

It isn't often that a university and a local pipe fitters union team up on an academic program, but the relationship that John Berry, an apprentice instructor of Plumbers and Pipefitters Local 174, Coopersville Mich., and Mike Feutz, department chair of the HVACR program at Ferris State University just naturally fit.

The long-time associates created an idea to utilize the Granger Center, FSU's new state-of-the-art HVAC facility, to train several of Local 174's apprentices. The Local has two types of apprentices: building trades apprentices, including pipe fitters and plumbers, and service apprentices, made up of HVAC service technicians.

Local 174 gets to use the university's facility at no cost, mostly during the summer when regular courses are not running. In exchange, Local 174 members are helping install an environmental chamber at FSU to be used for training. That's the trade off.

"We're utilizing the pipe fitters' skill on installation of piping systems to kind of pay the freight for the experience that the service apprentices gain by utilizing the labs," said Berry. "For us, it's great because we all benefit from learning, but there's no cost involved on either side."

Building Trades apprentices are producing drawings and creating mock cost estimates for their work at FSU, as if it were a real job.

Many of Local 174's service trades apprentices already have an associate's degree from Ferris, Berry noted. "We put them into our program, they receive credit for their college experience and then we place them on the job site with a qualified journeyman to really finish the task of building a highly qualified and trained mechanic."

While the partnership is still in its early stages, Berry hopes for a long and lasting relationship. "Ferris is the crown jewel of service training centers and of service curriculum," he said. "We're hoping we can continue to utilize its great facility, and help foster the next generation of responsible and professional employees."

UA Improves Industrial Construction Agreement

Flexibility and responsiveness aims at greater market share.

By UA General President William P. Hite

This is the fourth in a series of JobScope articles to inform UA members and readers of the details of several current UA agreements. These articles will discuss what the agreements cover, how they work, why they were developed, and how they can make union workers and their employers more competitive.

The United Association's portfolio of new and revised national work agreements covers every phase of work — from fabrication and installation to service and maintenance —performed by its members on industrial, commercial or residential projects. Each agreement offers owners and contractors comprehensive, flexible and sensible rules designed to make it attractive and cost effective to use UA craft persons for their projects.

The UA's National Construction Agreement, one of its earliest agreements, has been no exception. It has undergone a significant overhaul to bring its components up to date with the changing construction market and to reverse a recent decline in signatory contractors.

Even the name has been changed, to the **"National Industrial Construction Agreement (NICA),"** to help distinguish it from the Building and Construction Trades Department's *National Construction Agreement*. The latter is still considered a good agreement for contractors that work with a multi-craft union workforce. However, not all contractors need or want to work with several unions. The UA's NICA enables these contractors to still use UA members for their construction project.

Here is a summary of key changes and additions to the National Industrial Construction Agreement:

Training Fund Contribution. The employer pays a five- (5) cents-per-hour contribution to the UA International Training Fund (ITF) — used for manpower development and training — in addition to the prevailing training fund contribution of the UA local union. However, if the local union agreement also calls for an amount to be contributed to the ITF, the total international fund contribution will not exceed 5 cents. In other words, the local union labor agreement cannot cause the contractor to pay the ITF twice.

Scope of Work. Manufacturing facilities are now included in the list of industrial projects covered by the agreement.

Management Rights. These basically protect the rights of employers in the planning and direction of work; hiring, firing and layoff of workers and supervisors for legitimate reasons; and use of methods and machinery that ensure quality standards — all assuming that none of the above will be used to discriminate against any person.

Classifications. The agreement applies to journeymen, apprentices and foremen. All references to "subjourneyman" have been removed in the new version. Use of subjourneymen is permitted only in special circumstances, as approved by the UA (see Appendix A below).

Wages, Hours and Special Conditions. Wages, fringes and overtime pay are set by the applicable local agreement. Covered also are hours of work, reporting pay, and pay days. Where special conditions or requirements are warranted, modifications can be requested for a particular project, customer or location (see *Appendix A* below).

Fabrication. Gone from the new agreement are provisions and requirements for pipe hangers and supports which, in the past, had blocked the signing of new contractors. The UA will continue to encourage either on-site fabrication or use of UA union label fabrication shops.

Subcontracting. A stronger subcontracting provision now limits subcontracting to employers that are signatory to the NICA or other similar UA, Local, District Council or National Agreements that provide an economic package at least equal to the NICA.

No Strike/No Lockout and Grievance Procedures. While the agreement is in force, it states that there will be "no strikes, work stoppages or other curtailment or interference" with the job. There will also be no lockout. In the event of a grievance, the procedure calls for the American Arbitration Association (AAA) to select an impartial arbitrator — or, if agreed to by the parties, the Industrial Relations Council can be used as an alternative.

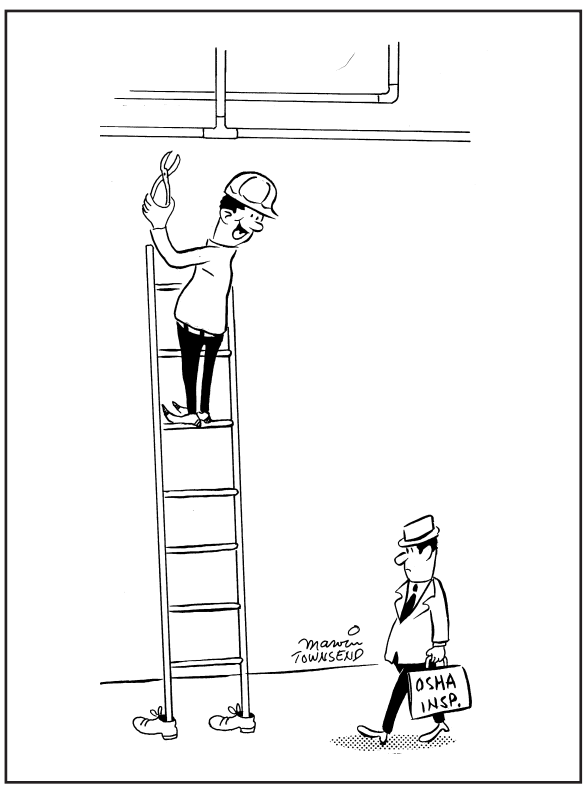
Other Changes. A number of other changes were made to the National Industrial Construction Agreement — in areas like referrals, work rules, weld-

ing tests, and safety and drug and alcohol policy — to make it consistent with other UA National Agreements.

New Special Weapon: To help ensure that signatory union contractors are on a level playing field when bidding against non-union competitors, the NICA includes an *Appendix A*. This supplement contains a "Special Conditions Request Form" that contractors can use to petition the union for modifications in one or more paragraphs in the agreement. The request, which is processed and accepted or rejected by the UA, can affect virtually any area of the agreement, from work crews and classifications to wages and benefits. However, the request can affect only one work site. If changes are needed on more than one site, an individual request form must be submitted for each job site.

Appendix A is not a device that can be used to circumvent regular conditions; rather, it is there to help employers and local unions address special requirements mandated by an owner, for example, on an individual project. This built-in contract tool gives the NICA flexibility and extra power to adapt to local conditions and special requirements of individual owners where necessary to compete for work.

The updated, streamlined National Industrial Construction Agreement makes UA crafts persons and their employers more competitive, flexible, and responsive to the special needs of owners. The modifications, it is believed, will place UA members on more industrial construction jobs and lead to a greater market share of this work in the future.



McCartin

(Continued from page 5)

said. While the main office in Hammond was regarded the base, before the job even began the field team in Kentucky looked for, and tested, local suppliers of pipe and tools. "If you can get them locally, you save the time and additional expenses of transporting everything 500 - 600 miles from your home base," Steinbach said. And a big job like the Ashland refinery, things were always needed.

McCartin McAuliffe rented a building near the job site for storage. Then instead of pulling everything from their main office, they grabbed it all from a nearly completed job in Indiana that was much closer, later sending everything that would not be needed back up north.

Buying locally as much as possible was the most cost-effective way of supplying the job. But you just don't pick up the phone and start ordering everything without doing a little homework first, Steinbach explained, to learn the local vendor's ability to expedite the things you are going to need.

"We'd visit the company and maybe the first time make a small order or two to see how they respond. And if they respond well, then you purchase more and more the next time," Steinbach said. Jim Krieger was in charge of material and tool expediting for the Ashland refinery.

Steinbach, who joined McCartin McAuliffe in 1984, has worked away from home for extended periods on a number of other jobs besides the Kentucky refinery. Married and in his 50s, he said most of the company's traveling supervisors tend to be a little older and more experienced. "I think that's good for two reasons," he said. "For one, they've gained a lot of experience locally on how to handle things. And for another, these people have established families. Their kids are grown, for the most part, and are in high school or college." It makes the long separation, which could be anywhere from 3 to 9 months, a little easier — not only for the husband but also the wife who, without children at home, might be able to accompany her husband on the road.

Extending their reach into new places where their expertise is needed allows McCartin McAuliffe to not only keep pace in tough economic times but also to grow.

"You take a younger, rawer person into a strange environment that's completely new, and they're trying to learn not only how to run work but how to run work in a foreign environment. It makes it even harder for them," Steinbach added.

Currently, some 30 supervisory personnel in all capacities — from project directors to superintendents to general foremen, safety supervisors, quality assurance managers, and field engineers — travel at any given time. This number increases, McCartin noted, when you add the people from other out-of-state jobs who now travel with them. That's right. More recently, the company began drawing not only from its main office staff in Indiana for supervisors. In a few cases, people from the Ashland, Ky. local union, for example, are now traveling themselves and helping build another McCartin McAuliffe project in Detroit.

People Make It Possible

"Everything we do in terms of our successes is beset upon our folks and their performance, McCartin said. "All the materials, pipe, etc. come from the same source as your competitor. The difference, you hope, will come from your people.

"Our folks have adapted to change. They have been willing to go around the country and work with other unions. The experiences they've had working in Chicago they have taken with them to other areas," he said.

It's a changing world for many mechanical contractors in the union sector and McCartin McAuliffe is no exception. Extending their reach into new places where their expertise is needed allows the contractor to not only keep pace in tough economic times but also grow.

"Every place you go, whether you've traveled for 10 or 20 years, is another learning experience, because of the local people, the local customer, their demands and expectations," Steinbach said. "You have to be flexible enough to mix your knowledge with all these and meld it together to be successful."

A WORD ABOUT WELDING

Total Quality Control of Pipe Welding and Brazing

By John H. Robertson

For the individual, there is no greater contribution that any UA member can make to protect the union way of life. For this reason, all UA Local 597 members are encouraged to participate in Certified Welding Training and Qualification to gain individual skills that, through the qualification process, can make them valuable and employable.

JobScope offers the following article, which provides a blueprint of the certified welding training and qualification process, whose inner mechanism helps two industry certified welding programs — NCPWB and newer UA CWP — operate in unison. Author and welding technical consultant John Robertson, a member of Chicago's U.A. Local 597, describes documentation and recording tasks and tools and their role in maintaining quality control of high quality welds on piping.

Part 1 - Certified Training and Qualification

Certified Training

Total quality control requires maintaining quality welding and brazing which must be supported by certified training, certified qualification, and the certification of compliance.

In Chicago, training of UA Pipefitter Local 597 members for pipe welding and brazing continues to be one of the highest priorities. Construction projects in the city of Chicago and the areas of northern Illinois and Indiana have always demanded quality pipe welding and brazing. The certified journeymen pipe welders and brazers of Local 597 have been legendary in meeting this demand.

The winds of change, though, have brought about a decline in the manufacturing base and the type of beneficial construction projects that were partially responsible for producing our highly skilled and experienced welders and brazers. With this change, we face a new challenge for training our welders and brazers. To face this challenge, we addressed our programs for welding and brazing training at three levels: entry level, basic and advanced pipe, with respect to advances in technology (i.e. welding, brazing, piping materials, design of piping systems and ongoing maintenance requirements).

We must continue to reevaluate our efforts and methods of welder and brazer training. New methods are being implemented by standardizing training plans. The curriculum includes technical presentations, practice (welding and brazing) exercises, along with documentation of the progress and a periodic review.

Standardizing our training plan will allow every student an opportunity to receive comparable training at each level, i.e. entry level, basic and advanced.

"A quality control system that can accommodate all languages of the industry is necessary to ensure total quality and cost control."

The goal is to achieve a greater success ratio.

The training should prepare welders for basic qualification of carbon steel and low alloy pipe material using the manual welding processes of gas tungsten arc (GTAW), shielded metal arc (SMAW), and torch brazing (TB) processes. Additional and/or advance qualifications for various alloys, materials, pipe sizes, specific welding processes, new WPSs and test standards usually calls for continued training and/or journeyman experience.

In UA Local 597, instructor candidates are selected from the ranks of journeymen who are recognized as top welders and/or brazers in their field with good mechanical piping knowledge; they often also possess supervisory experience, making them ideal candidates for instructors. The training program includes the certification of instructors.

Certification is an ongoing process that involves:

1. Pre-evaluation and certifications of practical testing with selected UA weld tests,
2. UA Journeyman Instructor Training Program and Authorized Testing Representative (ATR) training,
3. Recognition of certifications for ASNT Level II Visual Inspection and AWS Certifications (Welding Inspector (CWI), Senior Welding Inspector and Welding Educator).

Welder and brazer training begins during the apprentice program and/or later recurrent training for journeymen. The next step is the qualification process to establish and recognize a candidate's welding and brazing ability to achieve quality pipe welds.

Certified Qualification

The process of qualifying UA journeymen for welding and brazing certification developed from early beginnings. The Chicago Heating, Piping and Air Conditioning Association (now the Mechanical Contractors Association), formed the Certified Welding Bureau (CWB) of Chicago in 1940. In 1942, the CWB established the National Certified Pipe Welding Bureau (NCPWB) and became its founding Chapter. The NCPWB — under the National Heating, Piping and Air Conditioning Contractors Association (now the Mechanical Contractors Association of America) — swiftly became a nationally recognized organization. The NCPWB today has 42 Chapters with 550-plus contractor members in 21 states.

The demand for more qualified welders and brazers greatly increased over the years, affecting both NCPWB member and non-member mechanical contractors. Non-member contractors have followed similar initiatives, under their own Quality Control Systems, to develop *welding procedure specifications (WPSs)* and to qualify welders and brazers. These parallel efforts, over the years, unfortunately generated a duplication of WPSs as well as hundreds of thousands of welder/brazer qualifications — all resulting in a multiplication of costs that is unmeasurable.

Recognizing the negative effect this duplication of effort has had on the piping industry, the United Association in 1993 started the *UA Welder/Brazer Certification Program.* The UA idealized the concept that welders/brazers qualified under the organization's Quality Control System would allow an interchange between employing manufacturers and contractors and would improve qualifications of UA journeymen (i.e., qualified ranges, uniformity, quality and records, along with history and continuity).

The integrity of the UA and NCPWB programs are established by using third party witnesses, qualified inspectors, independent testing labs, along with third party verification for implementation and compliance. The Hartford Steam Boiler Inspection & Insurance Company of Connecticut furnishes that independent third party verification.

As the new UA program and NCPWB operated separately but with some duplication of effort, representatives of both began talking about working together to eliminate duplication. In April 1997, the UA, MCAA and the NCPWB signed a tripartite agreement that established a committee whose task would be to develop a uniform Welder and Brazer Certification Program for the mechanical industry. The directive was given to the UA's Authorized Testing Facilities (ATF) and local NCPWB chapters to begin participating in a joint qualification process.

In the Chicago area, UA Local 597's ATF, MCA of Chicago and NCPWB's Chapter 1 (CWB), support full implementation of the program and testing. Applications from UA members for qualification tests are accepted and scheduled by the resident UA or CWB Authorized Testing Representative (ATR). UA apprentice or journeymen pipe fitters must pass basic qualification tests before they can take on advanced UA qualification tests. Only UA journeymen with established qualification tests or work experience are eligible to take the advanced qualification tests.

The Tripartite Agreement and Certification Process.

UA Organizational Leadership - The objective of the UA's Welder/Brazer Certification Program is to provide highly qualified welders/brazers to fulfill the quality and workmanship requirements that govern the piping industry.

Tripartite Agreement - In April 1997, the UA, MCAA and NCPWB signed a Tripartite Agreement to develop a uniform Welder Certification Program.

MCAA/NCPWB - Mechanical Contractors Association of America and the National Certified Pipe Welding Bureau.

MCA/NCPWB/CWB - Mechanical Contractors Association and (NCPWB) Certified Welding Bureau of Chicago, IL.

HSB Assessment - The Hartford Steam Boiler Inspection & Insurance Company of Connecticut has established a continuing assessment process that furnishes an independent third-party verification of the conformity and effectiveness of the UA Welder/Brazer Certification Quality System and assures the integrity of the UA Welder/Brazer Certification Program.

ATF UA Local 597 - UA Local 597 Authorized Test Facility approved by the UA as the area's official ATF location for testing events and record system maintenance.

ATF Representative - Responsible for the administration of ATF operations, scheduling of test events, maintenance and issue of documentation and records.

ATR - UA Certified - Certification is based on compliance of the candidate to the UA Program requiring evaluation and approval by the UA Administrator/Director

Testing Event - Administration and execution of the welder/brazer qualification testing.

Operational Process - Steps required for the welder/brazer identification and indoctrination, test assembly ID, welding and in-process inspection, along with issue of test assembly to the ITL for final examination and inspection.

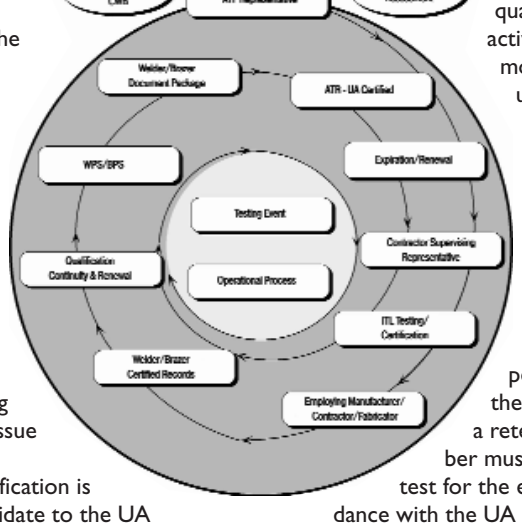
Welder/Brazer Document Package - Issued for each welder/brazer qualification test, which includes the following: testing event inspection report and performance qualification record. Document Package shall be maintained on file at the ATF for the active lifetime of the UA Member.

WPS/BPS - Welding/Brazing Procedure Specifications and Procedure Qualification Records are provided through the UA Program and/or the NCPWB, these documents are used to develop welder/brazer qualification test standards. The procedures, specifications and test standards are to be followed during the operation process of the test event.

ITL Testing/Certification - The ITL shall complete and certify the ITL Report (visual and radiographic examination) and welder/brazer performance qualification record for each individual tested.

Welder/Brazer Certified Records - Performance qualification records [i.e., WPQR, WPQT, JPQT (Ref. QW-484A), WOQT (Ref. QW-484B), BQT (Ref. QB-484)].

Qualification Continuity & Renewal - To maintain continuity, the welder/brazer must use process(es) they are qualified for at least once every six months. The employer reports to the ATF Representative the UA member's qualified welding/brazing process activity at least once every six months during employment. If unable to maintain continuity by employment, the UA member must demonstrate the welding/brazing process supervised by a UA ATR at the ATF.



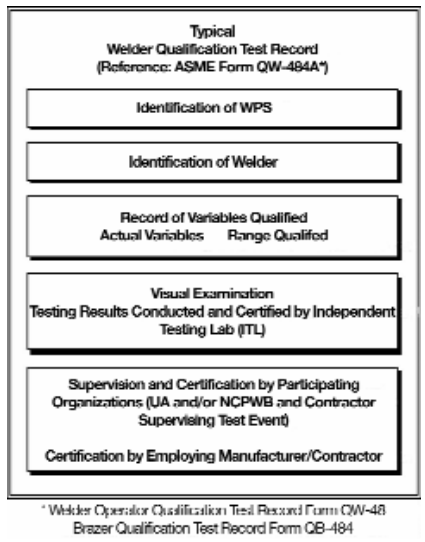
Expiration/Renewal - When a UA Member has not used the qualified welding/brazing process during a period of six months or more their qualifications shall expire. If a retest is required, the UA member must perform a new qualification test for the expired process(es) in accordance with the UA Program Test Event.

Contractor Supervising Representative - Performs with the ATR the in-process inspection of the test assembly and certifies the performance qualification record with a signature and date.

Employing Manufacturer/Contractor/Fabricator – The organization (under agreement with the UA) that employs the UA Member and is responsible for complying with the applicable requirements of the UA Program when utilizing a UA Certified Welder/Brazer. At least one representative is required to participate in each testing event and to certify the applicable records required by this program. The person also is responsible for providing the welder/brazer's activity report to the ATF representative. The employer's certification of the UA member's performance qualification record is the key to the program's success.

Execution of Qualification Records:

UA qualification test results are documented on the *UA Welder Performance Qualification Record (WPQR).* This record requires the signatures/dates of the UA ATR and the contractor supervising representative. The WPQR is made available to all participating manufacturers/contractors and, upon request, the ATF representative shall issue the WPQR, which shall be signed/dated by the employing manufacturer/contractor for certification.



UA/NCPWB Joint Welder Qualification Test Records are documented on the JPQT form. These records require the signatures/dates of the UA ATR and contractor/fabricator supervising representative. The JPQT is made available to all participating members (contractors/fabricators) of the NCPWB and, upon request, the NCPWB's secretary shall sign/date certifying the JPQT, which shall be issued to the employing contractor/fabricator for certification and use.

NCPWB Welder Qualification Test Records are documented on the WPQT form. These records require the signatures/dates of the CWB Chapter ATR and contractor/fabricator supervising representative. The WPQT is made available to all participating members (contractors/fabricators) of the NCPWB and, upon request, the NCPWB's Secretary shall sign/date certifying the WPQT which shall be signed/dated by the employing contractor/fabricator for certification and use.

A quality control system that can accommodate all languages of the industry is necessary to ensure total quality and cost control.

To be continued.

In the next issue, John Robertson will explain the need for Certified Compliance, another key requirement in the coordinated certified welding process.

For technical information or assistance, contact John H. Robertson of the J.H. Robertson Company, LaGrange, Ill., Phone (708) 496-9913, Fax (708) 496-9963 e-mail RWORLDARC@aol.com.

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