



**ANNUAL
TECHNICAL CONFERENCE / COMMITTEE MEETING**

**April 2024
Sunday, 21 – Tuesday, 23
The Scottsdale Resort at McCormick Ranch
Scottsdale, Arizona**



Schedule of Events

2024

NCPWB Technical Conference/Committee and Board Meetings
The Scottsdale Resort at McCormick Ranch
Scottsdale, AZ

Technical Conference / Committee Meeting

Sunday, April 21

Room*

5:30 p.m. – 6:30 p.m. Registration and Reception..... Bennie’s Courtyard
6:30 p.m. – 8:30 p.m. Dinner..... Pueblo Main

Monday, April 22

7:00 a.m. – 8:00 a.m. Breakfast Sunset Plaza
8:00 a.m. – 12:00 p.m. Technical Conference/Committee Meeting.... Arizona Main
12:10 p.m. – 1:10 p.m. Chapter Operations Seminar Arizona Main
Afternoon Golf or at Leisure

Tuesday, April 23

7:00 a.m. – 8:00 a.m. Breakfast Arizona Main
8:00 a.m. – 12:00 p.m. Technical Conference/Committee Meeting... Arizona Main
Afternoon Golf or at Leisure

Board of Trustees Meeting

Tuesday, April 23

5:30 p.m. – 6:30 p.m. Board Reception..... Community Lawn
6:30 p.m. – 8:30 p.m. Board Dinner..... Pima

Wednesday, April 24

7:00 a.m. – 8:00 a.m. Breakfast McDowell Terrace
8:00 a.m. – 12:00 p.m. Board Meeting Pima

*Note: The resort may change our meeting rooms at the time of the meeting. Please check with the hotel monitors/personnel for any room changes

Questions regarding registration should be directed to the MCAA Events at events@mcaa.org

Technical Conference/Committee Meeting Agenda

Monday, April 22

8:00 a.m. – 8:30 a.m. ■ Technical Committee Meeting Agenda

1. Welcoming Remarks
2. Approval of the Technical Committee Meeting Minutes
3. MCAA President-Elect's Remarks
4. UA Update

8:30 a.m. – 9:15 a.m.



Speaker: Craig Spindler, BTJ Pipefitter/ Regional Sales Specialist
Miller Electric Manufacturing Co

Title: Advancements in Pipe Welding

Abstract: This presentation will cover Miller welding educational resources and advancements in pipe welding technologies including RMD for the root passes on carbon steel as well as stainless steel, Pulse for the fill and cap passes, Arc Reach technology for field applications on electric and engine driven equipment, and induction heating for preheating.

Bio: Craig Spindler has over 30 years of welding experience. He started at the Steamfitters Local 400 working as a welder and running jobsites all over the United States. In 2006 Craig joined Miller Electric as a Technical Specialist. He has been involved in customer support, application testing, product development, testing, training, and helping drive the welding industry forward. Craig is a member of the American Welding Society (AWS) and a CWI, CWE.



Co-Speaker: Steve Hidden, National Account Manager-Welding Education & Workforce Development, Miller Electric Manufacturing Co

Title: Advancements in Pipe Welding

Bio: Steve Hidden is the Miller Electric Mfg. National Account Manager for Welding Education and Workforce Development. He has worked for Miller since 1997, serving in a variety of product development and business management roles in areas such as plasma cutting, engine driven welders, welding accessories and training products. In his current role, Steve works closely with Education Facilities and Large Manufacturing Companies to promote Miller collaboration in welder recruiting, screening, educating, training, retaining and re-qualification of current employees.

Steve is a member of American Welding Society (AWS), SkillsUSA, Association for Career and Technical Education (ACTE), ACTE Business & Industry Committee, Correctional Education Association (CEA) and National Coalition of Advanced Technology Centers (NCATC) and is a member of the SkillsUSA Foundation Board, Fabricators & Manufacturers Association Certified Education Center Council, National Center for Construction Education & Research (NCCER) Workforce Development Committee, Coalition for Workforce Development Committee, and National Center for Next Generation Manufacturing National Visiting Committee.

Break– 5 Minutes

Technical Conference/Committee Meeting Agenda

Monday, April 22

9:20 a.m. – 10:0 a.m.



Speaker: Theodore J. Jones, President, Critical System, Inc.

Title: Orbital Welding Technology for Med Gas

Abstract: CSI is a leader in research and development in the computer operated welding equipment. After spending years on these activities CSI has developed a universal power supply as well as copper orbital welding machines to support the increase in medical gas piping and improve quality in the other uses. This research has not come with hurdles based on the new technology and complex metallurgical properties. This presentation will share some of those struggles (temperatures, materials, code requirements) as well as how CSI is overcoming these to bring this to the commercial market.

Bio: Theodor Jones earned his BS in Aerospace Technologies from Utah State University - College of Engineering. His career includes 35 years in Semiconductor & Biopharmaceutical, process systems installation and Fabrication and 25 years as the owner and founder of Critical Systems, Inc. Theodore's educational focus served him well when he started his career in the Silicon Valley in the late 1980's. This emerging region of the USA, known at the time simply as "The Valley," was loaded with inspiring characters having the same attitude as his own, "the sharing of ideas to make things work and philosophy to fail fast." Ultimately after trial and error, we would find a way. Churchill was quoted as saying, "the Americans always get it right... after they've tried everything else." He was poking fun at us but in essence he pointed out what makes this country great, that failure is an option, ultimately leading to the right answer. Fail fast...



Co-Speaker: Lynne Cooper, Director Orbital Technology Group, Critical Systems, Inc.

Title: Orbital Welding Technology for Med Gas

Bio: Lynne Cooper is an experienced project and people manager with extensive knowledge in the life sciences and pharmaceutical construction space. She has spent over twenty years in the biotechnology and complex structures space advocating for Owners to enable solutions for patients to be delivered as soon as possible. Her areas of expertise include strategy and planning collaborative project teams in developing sustainable, enjoyable and most importantly functional spaces for maximum productivity and health. She has innovated throughout her career in business, founded two companies and continues to counsel others. She remains committed to growing and strengthening her industry by giving back to the community serving her local ISPE Chapter as President 2024/25 (continuing 7 years of service). She advocates for the trades and tradespeople knowing this is where we can take building to the next level of success and quality.

Break– 5 Minutes

Technical Conference/Committee Meeting Agenda

Monday, April 22

10:05 a.m. – 10:50 a.m.



Speaker: Janusz Bialach, P.Eng, Liburdi Automation Inc.

Title: Adaptive Welding – Case Study and Recent Advancements

Abstract: This presentation will describe a first-of-a-kind welding system that will be used for encapsulation of spent nuclear fuel at the DOE Hanford Site. Due to the complexity of fully remote operation, the project has decided that the closure welds must be done with minimal or no operator input. This is a departure from the traditional approach, where the operator has full control of the welding system and can make adjustments to compensate for the fit-up, manufacturing tolerances and the welding system alignment.

This autonomous technology required development, integration, and implementation of not only active path compensation, but also adaptive welding parameters; where current, voltage, travel speed, wire feed speed, oscillation excursion and dwell times, are all determined by the controller.

The presentation will also provide an update on the state of the Adaptive Welding technology; specifically the use of Artificial Intelligence to characterize the joint geometry and to provide data for the adaptive algorithms. Use cases will be discussed, including pipe welding.

Bio: Janusz is a graduate of University of Waterloo with a degree in Mechanical Engineering. Over the past 20 years he has been working for Liburdi Dimetrics in various technical and management positions. During his time at Liburdi, Janusz has designed and implemented numerous robotic welding systems to solve challenging problems present by the industry. In his current role of Division Manager, Janusz oversees development of automated welding solutions for nuclear, power generation, shipbuilding, oil & gas and other markets.

Relevant LinkedIn handles:

Janusz Bialach: <https://www.linkedin.com/in/janusz-bialach-618a94146>

Liburdi Dimetrics: <https://www.linkedin.com/company/liburdi-dimetrics/>

Break– 5 Minutes

10:55 a.m. – 11:40 a.m.



Speaker: Casey Williamson, Global Business Development Micro Electronics, GF Piping system

Title: Best practices for installation of thermoplastic piping systems

Abstract: GFPS Engineering Services Background, Nonmetallic pipe installation recommendations, Sleeves, Pipe Guide, Fixed points, Vertical Supports (fixed points), Continuous Support for hot Systems, Valve support, other design consideration, Bullet

Bio: Casey has over 20 years' experience in determining customer/market needs and implementing solutions within sales and manufacturing organizations. My primary focus has been in microelectronics and chemical processing plants (e.g., Intel, Samsung, Global Foundries), focusing on facilities and wet processes (waste water, process cooling water, etc.). My experience is split between technical consulting on process piping and process measurement and sales of equipment. I have also lead teams for many companies for product and/or process improvement, application development, and internal and external system optimization, with several published industry articles, patent holder. Conversant with business practices in Europe and Asia.

Chapter Operations Seminar

Monday, April 22

12:00a.m. – 1:00 a.m.

Chapter Operations Seminar

The one-hour seminar is primarily designed for NCPWB local chapter secretaries and attendees interested in exploring the following topics:

- ASME QG 106 Compliance
- NCPWB and Code Compliance
- Chapter Secretaries' Duties

Technical Conference/Committee Meeting Agenda

Tuesday, April 23

8:00 a.m. – 8:45 a.m.



Speaker: Ted Valentini, Sales Director- Western US Regions, Miller Electric Mfg

Title: Closing the Welder Gap - The importance of driving Education and Automation for business success in the future.

Abstract: The lack of welders in our industry, approximately 400,000+ and growing, is starting to have a severe impact on projects getting manned and completed in a reasonable timeframe. To attack this deficit, we need to start thinking differently and acting aggressively before it's too late.

We have to negate this deficit by educating more people in welding and getting them to join our industry. This is no easy task and will not fill the need anytime soon. People today, expect there to be options and new technologies for learning to appeal to every type of learner. Training technologies such as Augmented Reality and Virtual Reality Systems are being used in the Educational space.

We need to attack our industry's lack of people with automation solutions where appropriate and applicable. More and more options are open in this arena such as Cobots, Additive Manufacturing and others. We have to accept/grasp the new trends and emerging technologies and creatively find ways to implement these into traditional welding applications. The old way of just out peopling the problem is over. If you don't accept and implement, your company might not make it in the next decade.

Bio: Ted started his career in the Welding Industry, 34 years ago (1989) at Hobart Brothers Company in Troy, OH. Currently he is the Sales Director – Western US Regions for ITW Welding (Miller/Hobart/Bernard) and resides in Houston, TX. He has served in various Customer Service, Marketing, Operations and Sales roles over his career such as a Customer Service Rep, Customer Service Manager, Product Manager, Business Unit Manager, Director of Business Development, and Regional Sales Manager. He also is responsible for the ITW Technical Center located in Houston, TX and is very active in the Education Markets and Sales Recruitment and Development. Ted also served in the United States Army for 21 years as a Cavalry, Finance and Psychological Operations Officer. He deployed twice and was awarded the Bronze Star and Combat Action Badge for his actions in Iraq.

Break– 5 Minutes

Technical Conference/Committee Meeting Agenda

Tuesday, April 23

8:50 a.m. – 9:35 a.m.



Speaker: Lynn Sturgill, B.S., SCWI, Sturgill Welding & Code Consulting

Title: High-Purity Tube Welding

Abstract: What is “High-Purity Welding?” Are the welds any more pure than other welds? The answer is, “No.” It’s not about the purity of the welds themselves. It’s about building piping systems that will prevent contamination of the liquids they contain. Although the ASME piping codes are primarily concerned with pressure safety, there is another piping standard that also addresses safety. That standard is the ASME Bioprocessing Equipment (BPE) Standard. But, the safety involved is the safety of the drug product being processed.

Although pharmaceutical systems are within the scope of ASME B31.3, those rules alone do not adequately address all of the required features of a drug processing system to prevent contamination of the drug product. Requirements for High-Purity fluid service, Chapter X, published in the 2010 edition of ASME B31.3, sends the user to the ASME BPE Standard for the weld acceptance criteria. These criteria involve, among other things, strict limits on tube ID weld and heat-affected zone discoloration, limits on weld bead concavity and convexity, and limits on sulfur contents for austenitic stainless steel weld ends to be welded autogenously.

ASME B31.3 and the ASME BPE Standard, together, form the requirements that piping fabricators must meet to build systems suitable for pharmaceutical manufacturers. ASME B31.3 specifically requires piping fabricators to examine their welds and specifies the qualifications of personnel who perform those examinations. Furthermore, Chapter X of B31.3 explains the system under which weld coupons are permitted in lieu of radiography and describes the conditions under which coupons are required. Fabricators must understand the examination requirements of ASME B31.3, the weld acceptance criteria in the ASME BPE Standard as well as the additional requirements for the qualification of welding operators.

Bio: Lynn is the owner and operator of Sturgill Welding & Code Consulting (SWCC), a privately-owned welding and engineering consulting company. Lynn has more than 30 years of experience in the manufacturing, welding, and inspection of metallic goods in the nuclear, aerospace, structural, petrochemical, military, food and dairy, and biopharmaceutical industries.

Lynn is a degreed engineer, an AWS Senior Certified Welding Inspector (SCWI), a 3-A Certified Conformance Evaluator (CCE) and an ASNT Level III Visual Testing (VT) Inspector (#141940). He has developed and delivers courses on Section IX of the ASME Boiler and Pressure Vessel Code and has represented ASME internationally. He holds a Bachelor’s degree in Metallurgical Engineering from the University of Tennessee.

He has trained and qualified ASNT Level II and III VT examiners and inspectors for fabricators and pharmaceutical clients, respectively. He has also taught seminars on metallurgy, welding, stainless steels, high-purity welding, corrosion, and inspection requirements for various companies in the biotechnology, pharmaceutical, semiconductor, chemical processing, and microelectronics industries. He is an Adjunct Instructor for the American Welding Society (AWS), teaching the Certified Welding Inspector (CWI) seminar for nearly 20 years. In addition, he has qualified numerous welders and welding procedures to Section IX of the ASME Boiler and Pressure Vessel Code.

Lynn has been involved with the high-purity welding industry since 2006. Working as an ASNT SNT-TC-1A Level III Visual Testing (VT) Inspector, he trained numerous Level II VT inspectors for Purity Systems, Inc., a provider of 3rd party inspection services for pharmaceutical companies. This helped develop a deep knowledge of the ASME B31.3 Process Piping Code’s rules for examination and inspection. ASME B31.3 and the ASME BPE Standard impose explicit requirements for high-purity piping fabricators, significantly more detailed than those for building services piping or even steam lines. Additional rules for welding qualifications and examiner qualifications are important for fabricators to understand.

Lynn is Vice-Chairman of ASME’s Section IX Committee and Chairman of the ASME Committee on Bioprocessing Equipment (BPE) Certification (CBPEC). He is also a member of several other ASME BPE subcommittees.

Break– 5 Minutes

Technical Conference/Committee Meeting Agenda

Tuesday, April 23

9:40 a.m. – 10:25 a.m.



Speaker: Dr. Thomas J. Lienert, T.J. Lienert Consulting, LLC

Title: Advances and Challenges in Welding and Additive Manufacturing

Abstract: This presentation will discuss recent developments related to welding and additive manufacturing. Newer welding process innovations such as pulsed GMAW, STT/CMT GMAW, Hyperfill (multiple wire GMAW), TOP TIG and manual LBW will be overviewed first with an emphasis on videos of the processes in action. Select automation topics will also be examined, including use of cobots for welding and inspection with a view toward improved productivity. The latest advancements related to laser welding will also be described, again with a focus on videos. The discussions on additive manufacturing (AM) will begin with a review of the seven AM processes described by the ASTM F 42 committee. Subsequently, various advances in AM processes, like multi-beam L-PBF, wire L-DED and WAAM will be described and illustrated with videos. The talk will conclude with an assessment of current challenges in the welding industry including demographic trends, diversity, equity and inclusion issues in employee recruitment and retention, and increased needs for automation.

Bio: Dr. Thomas J. Lienert is internationally renowned as a scientist/engineer with over 43 years of documented accomplishments in additive manufacturing (AM), materials science, welding engineering, and laser materials processing. He retired in 2018 from the Welding and Joining Team at Los Alamos National Laboratory after >16 years and currently consults with Optomec, Inc, a leading producer of L-DED machines. Tom has held previous positions with the Faculty of the Mechanical Engineering Department at the University of South Carolina, as a Senior Engineer at the Edison Welding Institute, and as a Research Technician at Sandia National Laboratories. He earned a B.S. Degree in Welding Engineering (1992), as well as M.S. (1995) and Ph.D. (1998) Degrees in Materials Science and Engineering from The Ohio State University.

Dr. Lienert has proven experience in managing large dollar R&D portfolios and has documented success with securing funding from private and government agencies through proposal writing. He has considerable management and leadership experience in industry, academia, and volunteer organizations. He is also Past President and was a member of the Board of Directors of the American Welding Society (AWS) for the last 13 years ending in December 2022. In addition, Dr. Lienert is acknowledged as an outstanding researcher with a portfolio of high impact peer-reviewed papers, academic awards, and recognitions from professional associations. He has published over 40 peer-reviewed journal articles, authored six handbook chapters, and made more than 150 technical presentations. Dr. Lienert holds several patents and serves as the Review Editor for the Welding Journal Research Supplement (WJRS). His research contributions have been recognized as an AWS Fellow and an ASM International Fellow.

Break– 5 Minutes

CONFERENCE SCHEDULE

Tuesday, April 23

10:30 a.m. – 11:15 a.m.



Speaker: Robert Derby, Training Specialist, Administrator of Certification Programs with the UA

Title: Welder and Welding Operator Qualification

Abstract: This presentation will discuss the reason there are redundancies in qualification tests to ensure the welders and welding operators have qualified using the variables consistent with what will be performed on specific job sites. For example, a comparison of UA-2, UA-21, UA-60, and UA-81 will be explored as will other areas of overlap.

Bio: Bob Derby completed his Steamfitter apprenticeship at Local 174, West Michigan, in 1998. He began teaching welding as a part-time instructor in 1999 and had the honor of helping to set up his local's training center as an Authorized Testing Facility for the UA Welder Certification Program, becoming the first ATR for Local 174. During his career, Bob was given the opportunity to serve in leadership as a foreman, general foreman, superintendent, and project manager. When given the opportunity to serve as a full-time instructor at Local 174, he gladly accepted. That roll led to the position of training director for the local. He earned the credentials of AWS-CWI in 2006 and served many QA/QC rolls for local contractors and Local 174 thereafter. In 2012, Bob began teaching ATR and CWI courses for the UA, regionally and at Instructor Training Program. He continued teaching part-time until fall 2021, when he became a training specialist for the United Association International Training Fund.

Break– 5 Minutes

11:20 a.m. – 11:40 a.m.



Speaker: Walter j. Sperko. P.E., Sperko Engineering

Title: Selecting, Adopting and Submitting NCPWB WPSs to customers

Abstract: NCPWB has 213 welding, 4 brazing, and 1 soldering procedure specifications. There are specific rules that contractors have to follow before submitting them to customers. This presentation will review how to select the appropriate WPSs and BPSs, how to properly complete them and what to do when a customer comments on or rejects them.

Bio: Walter Sperko is the Technical Consultant to the National Certified Pipe Welding Bureau and a member of the Engineering Committee of the Pipe Fabrication Institute. He provides engineering consulting services to customers in the metal fabrication industries in the technical areas of welding, metallurgy, manufacturing processes, piping and pressure vessel design, inspection and quality assurance. Sperko Engineering also prepares and conducts training programs in piping, welding and metallurgy for ASME, as well as custom-tailored programs related piping and welding. He is a Professional Engineer registered in several states. Mr. Sperko holds five patents and serves on various ASME Code committees including:

ASME Board on Pressure Technology, Codes and Standards, Vice-chairman

ASME Boiler and Pressure Vessel Code Committee

- Subcommittee IX (Welding, Brazing and Fusing), Past-Chairman
- Subcommittee II, Subgroup on Strength of Weldments
- Subcommittee III (Nuclear)

ASME B31 Code for Pressure Piping

- Standards Committee
- ASME B31.9, Building Services Piping

American Welding Society

- Technical Activities Committee, First vice-chairman
- International Standards Activities Committee, Past Chairman
- D10 Committee on Pipe and Tube

Technical Conference/Committee Meeting Agenda

Tuesday, April 23

Technical Committee Meeting Agenda

- 5 Open floor – Attendees inquire.
- 6 Reelection/Nominations – Board of Trustees
- 7 Announcement of new Board advisory member
- 8 Adjournment

Future Tech Conference/Committee Meetings

2025 – April 27-29, Clearwater Beach Marriott, Clearwater Beach, FL,

2026 – April 26-28, Hyatt Regency Hill Country Resort and Spa, San Antonio, TX