

B31.3 BPE Course Instructor:



William M. (Bill) Huitt
Owner
W. M. Huitt Co.

CRN Course Instructor:



Rob McGregor
CEO
Titan Research Group

Surface Finish Course Instructor:



Ken Kimbrel
VP
UltraClean Electropolishing, Inc.

Experts in their respective fields, these instructors round out a full 3-days of training and instruction on the procedures necessary to obtain Canadian Registration, understand the B31.3 Piping Code, understand the requirements for high-purity systems through the BPE Standard, and gain insights into high-purity metallic surface finishes. A compilation of courses that culminate in a facility walk-thru. A walk-thru that will allow you to witness, first-hand, the complex and intricate process and procedures necessary in perfecting the art of obtaining high-purity surface finishes.



**3-Days of Courses Brought to you
Through the Partnership of
W. M. HUITT CO.
TITAN RESEARCH GROUP, Inc.
ULTRACLEAN EP, INC.**

**Presenting a Compilation of Courses that include
CRN's, B31.3, BPE, Metallic Surface Finishing
and Remediation, all capped by a Facinating
Tour of an EP/Passivation Facility**

Based on the BPE Standard, CRN Regulations, and R_a Requirements

The following contains information on Mr. William M. (Bill) Huitt (ASME BPE Standard) , Mr. Rob McGregor (Canadian Registration Numbers), and Mr. Ken Kimbrel (Surface Finishing)

ACKNOWLEDGEMENT

W. M. Huitt and Rob McGregor are independent consultants and training instructors. Their interpretation and guidance on industry Codes, Standards, and government regulations are theirs and not those of ASME or any other accredited organization. All instructional material has been provided by and is the sole property of W. M. Huitt and Rob McGregor, respectively; as is that of Mr. Kimbrel.

Testimonials

William M. (Bill) Huitt

"Bill Huitt has long been the expert amongst experts when it comes to piping systems and their design."

Earl Lamson Sr. Engineering Project Manager at Eli Lilly & Co.

"Bill has great insight in determining what is needed to make a piping project successful and then making it happen."

Jeff Bradley Engineering Consultant at Eli Lilly and Company

"Bill is extremely knowledgeable in his field of piping and materials. He is a wonderful person to work with and I highly recommend him."

John Calvert Sr. Process Engineer, Independent Consultant

Rob McGregor

"Thanks to Rob and his team for working to meet deadlines so CRNs could be obtained before product launch. This is the first time we've had CRNs prior to product release. Greg Tischler (Product Manager) is very happy with how this project turned out."

Bill Shreve, Engineering at VEGA Americas

"Thanks a lot Rob. We give full credit to your perfect guidance. Thanks again."

Ajay Kumar Goel, DEE Piping Systems

Ken Kimbrel

"Ken brings a wealth of knowledge on stainless steel products we use in the biotech industry. He is well versed on metallurgy, fabrication and remediation. His recommendations are sound and cost effective. We have used Ken as subject matter expert, his company during shutdowns because when the work is completed, it is of high quality and addresses the source of the problem."

Hank Szeto – Sr. Director Engineering and Facilities Bio Marin

"Ken has been involved in the Pharmaceutical and Food Industries for many years providing services to his clients. Electropolishing is important to ensure cleanability, reduce corrosion and provide the surface required for many applications. The best source for getting this done is through Ken at Ultrclean. Ken is great to work with and will go an extra mile for you."

Dr. Hira Ahluwalia – Consultant/Owner; Material Selection Resources

Course Agenda – BPE Standard Day 1 – Day Month Year

Course Overview

This 3-day course will provide the attendee with an in-depth understanding of the complex and varied procedures laid out by each Canadian Province necessary for an applicant to navigate in order to obtain a Canadian Registration Number (CRN) for pressure containing components intended for use in Canada. Also provided is broad, but specific information needed to perform design, engineering, and construction in accordance with ASME B31.3 and the BPE Standard more efficiently and effectively. The B31.3/BPE course also provides a better understanding of regulatory compliance, system ratings, and leak testing requirements. This 3-day course is close out with an insightful discussion on the topic of metallic surface finishing processes that culminates with a facility tour to see first-hand how these processes are actually performed.

Day 1: The attendee will learn the intricacies of preparing and registering for a CRN. The CRN registration process has become a complex and convoluted process on its own merits. Multiply that complexity by the different processes and procedures among the various provinces and it is no wonder that many manufacturers of pipe, fittings, valves, and pressure vessels simply shy away from what could be a lucrative market. Learn the ins and outs of CRN registration from an expert.

Day 2: Helps the attendee better understand both the B31.3 Code, the BPE Standard and how they align and work together in an integrated manner. The discussion will explain how to interpret Codes and Standards and the difference between a requirement and a recommendation. Also explained is the BPE Certification process and how that benefits the industry.

Day 3: This day wraps up the compilation of courses by finishing the discussion on B31.3 and BPE then transitioning into an in-depth discussion on metallic surface finishing. This discussion will delve into the process of Electropolishing and passivation of new piping and equipment with an additional discussion on the remediation of rouge that develops in existing in-use systems. This topic is brought home with a facility walk-thru of UltraClean's metal surface finishing process

Who Should Attend

This compilation of courses is beneficial to process engineers, utility engineers, piping designers, pipe spec writers, piping fabricators, CAD operators, fitting manufacturers, plant maintenance personnel, instrument engineers, mechanical engineers, pipe and fitting suppliers, and distributors. Anyone associated with pressure containing components and the manufacture of equipment, or the design, construction, installation, and maintenance of process facilities, and more to the point, those associated with bioprocessing facilities, can benefit from this 3-day course.

Why You Should Attend

If you wish to better understand the nuances of obtaining CRN's, or learn how to interpret Code Rules in understanding the requirements of the B31.3 Code and BPE Standard, and receive insightful information on Electropolishing, Passivation, and Rouge Remediation by seeing first-hand how these processes take place, then this group of courses should be on your must do list for things to do in the coming year.

8:00 Start of class

1. What is a Canadian Registration Number (CRN)?
 - a. Did you really say 'design registration'?
 - b. History of CRN.

~10:00 to 10:15 Mid-morning break

2. CRN's across Canada.
 - a. Legislative basis of CRN.
 - b. Pressure safety regulatory framework of Canada.
 - c. Who are the safety authorities, what do they do?
 - d. Critical provincial acts and regulations.
 - e. CSA B51 – the governing fitting, piping and pressure vessel code of Canada in a nutshell.

~12:00 to 13:00 lunch break

3. Pressure safety regulatory framework of Canada
 - a. Are my products exempt?
 1. A listing of universal and particular exemptions.
 - b. Fittings, piping system and pressure vessel CRNs explained.
 - c. What technical data do I need to submit to obtain a CRN?
 - d. What to provide when a test is required – getting it right to avoid re-testing.
 - e. To test or not to test, that is the question – a quick code refresher for the CRN applicant.
 - f. What additional paperwork do I need to submit and to whom?
 - g. A rough overview of lead times and costs to obtaining a CRN.

~15:00 to 15:15 Mid-afternoon break

4. Tips and tricks for successful CRN applications
 - a. Technical report format and presentation.
 - b. Key examples of report content, drawing content and test.
 - c. Dealing with Canadian bureaucracy for dummies.
 - d. What buttons to press and how hard to press them: ways to expedite, respond, and progress an application.
 - e. The Canadian mindset: how to successfully work with Canadian engineers & regulators.
5. Q & A
6. Close Out

~16:30 End of Day 1

Course Agenda – B31.3 and BPE
Day 2 – 27 March 2018

Course Agenda – BPE/Surface Finish
Day 3 – 28 March 2018

8:00 Start of class

1. The 2016 ASME B31.3 Piping Code – An Overview.
2. Structure of the Code.
 - a. The Base Code.
 - b. Augmenting the Base Code.
 - c. Appendices (19).
 - 1) Are the Appendices a requirement?
3. Two general statements.
 - a. Introduction and paragraph 300 (b)(1).

8:00 Start of class

1. High Purity Fabrication.
 - a. Orbital Welding.
 - b. The effect of sulfur in 316L SS.
 - c. Fabrication drawings.
 - d. Turnover Package Documentation.
2. Examination, Inspection, Testing.
 - a. Defining Examiner and Inspector.
 - b. ASME Certification Mark.

~10:00 to 10:15 Mid-morning break

4. When are you required to comply with B31.3.
5. Listed components
 - a. What does that even mean
6. What's in a definition
7. How does B31.3 and BPE work together

The BPE Standard

1. The 2016 ASME BPE Standard – An Overview.
2. Preamble
3. Body
4. Appendices
5. Understanding Codes & Standards.
 - a. Requirement or Recommendation.
 - b. Code Cases.
 - c. Request for Interpretation.

~10:00 to 10:15 Mid-morning break

2. Examination, Inspection, Testing (Cont.).
 - c. Surface anomalies.
 - d. Leak Testing.
 - e. Hydrostatic.
 - f. Pneumatic.
 - g. Initial Service Leak Test.
 - h. Sensitive Leak Test.
 - i. Alternative Leak Test.
3. ASME BPE Certification.
 - a. The BPE Certification Program.
 - b. What products are eligible for Certification.
 - c. What companies are Certificate Holders.
 - d. What is the benefit of Certification.
4. What's in the pipeline for the BPE.
 - a. BPE 2018 has much more content, with more to come.

~12:00 to 13:00 lunch break

6. When are you required to comply with BPE.
7. The difference between a code and a standard.
8. FDA compliance.
9. FDA facility audits.
10. Unlike B31.3, BPE is part design manual.
11. Non-Metallics and Single-Source.
12. High Purity Design.
 - a. The premise for High Purity Design.
 - b. Cleanability.
 - c. Belgium Research.

~12:00 to 13:00 lunch break

1. Buffing - Pros and Cons.
2. Mechanical Polishing – Pros and Cons.
3. Surface Finishes - Is RA Critical?
4. Cold Worked metal - Potential Problems.
5. Understanding Electropolishing.
6. In-Situ (In Place) Electropolishing.
7. Rouge Control and Remediation.
8. Electrochemical Cleaning- What is it?
9. Electrochemical Passivation.

~15:00 to 15:15 Mid-afternoon break

12. High Purity Design (Cont.).
 - d. CDC Study.
 - e. Design Elements.
 - f. Slope
 - g. Valves
 - h. Dead-leg requirements.
 - i. Weld joint acceptance criteria.

~15:00 to 15:15 Mid-afternoon break

10. UltraClean EP Facility tour.
 - a. Walk the floor and see the equipment.
 - b. *See how various activities are carried out.
 - c. See how product is handled – start to finish.

*Largely dependent upon work that is scheduled through the facility at tour time. Note too, that course outlines above provide an idea of the subject matter, which may or may not be presented in the order listed.

~16:30 End of Day 2

~16:30 End of Day 3 – End of Course

W. M. (Bill) Huitt has been involved in industrial piping design, engineering and construction since 1965. Positions have included design engineer, piping design instructor, project engineer, project supervisor, piping department supervisor, engineering manager, and president of W. M. Huitt Co. a piping consulting firm founded in 1987. His experience covers both the engineering and construction fields and crosses industry lines to include petroleum refining, chemical, petrochemical, pharmaceutical, bioprocessing, pulp & paper, nuclear power, biofuel, and coal gasification. He has written numerous specifications, guidelines, papers, and magazine articles on the topic of piping design and engineering, as well as a 544 page hardcover book titled "Bioprocessing Piping and Equipment Design – a Companion Guide to the ASME BPE Standard." Bill is a past member of ISPE (International Society of Pharmaceutical Engineers) where he was a member of the Task Group on ISPE Water and Steam Systems – Baseline Guide Chapter 10 Rouge and Stainless Steel, CSI (Construction Specifications Institute) and ASME (American Society of Mechanical Engineers). Bill also serves on two corporate specification review boards, and served on the Advisory Board for ChemInnovations 2010 through 2012 a multi-industry Conference & Exposition sponsored by Chemical Engineering magazine.

Mr. Huitt holds membership on the following:

- ASME Board on Conformity Assessment BPE Certification
- ASME B31.3 Section Committee
- ASME B31.3 Subgroup H on High Purity Piping – Chair
- ASME BPE Subcommittee MM on Metallic Materials
- ASME BPE Subcommittee MJ on Material Joining
- ASME BPE Subcommittee CR on Certification – Vice Chair
- ASME BPE Subcommittee GR on General Requirements
- ISPE Co-author of Baseline Guide on Chapter 10 Rouge and Stainless Steel
- CSI
- API Co-author of RP-2611 Terminal Piping Inspection

(Note: ASME (American Society of Mechanical Engineers), ISPE (International Society of Pharmaceutical Engineers), CSI (Construction Specification Institute), and API (American Petroleum Institute))



Rob McGregor, PE has been engaged in the analysis and qualification of B31.1 Power Piping, B31.3 Process Piping, B31.5 Refrigeration Piping systems as well as ASME VIII pressure vessel design reviews for over a decade. Prior to founding Titan Research Group in 2007, Rob as served as group leader, installation manager, design engineer, senior design engineer, and C.O.O for multi-national engineering and construction companies abroad and in Canada. In his capacity as CEO and Director of Engineering at Titan Research Group, he has assisted companies from around the world obtain and renew Canadian Registration Numbers across Canada. Through his membership in ASME code and standards committees, Rob has taken steps to expand the perspective and approach of committee members and regulators as to the current challenges of Canada's pressure regulatory regime and advanced ways to improve the ease by which manufacturers and designers of pressure systems and component may improve sales while ensuring safety.

Mr. McGregor holds membership in the following:

- ASME B31.3 Section Committee, subgroup on High Purity Piping
- ASME BPE subcommittee on seals (SG), subcommittee on valves (SC sub-part of SG), and process instruments (PI)
- ASME Section VIII committee contributor
- Licensed Professional Engineer, Professional Engineering of Ontario



Ken Kimbrel is Vice President of UltraClean Electropolish, Inc. He is responsible for technical publications, sales, marketing, process, and material evaluation in corrosive environments. He attended Tulsa Community College and has an extensive background in engineering and equipment manufacturing. He is a NACE International Board Certified Corrosion Technician. Ken is the current Chair of the ASME BPE Standards Committee. He has served as past chair of the sub-committee on Metallic Materials and past Chair of the Surface Finish Sub-committee. He is also a member of the sub-committee on Certification as well as Vice Chair of the BPE Executive committee.

Mr. Kimbrel holds membership in the following:

- International Society for Pharmaceutical Engineering (ISPE),
- ASM International (ASM),
- International Metallographic Society (IMS),
- National Association of Corrosion Engineers (NACE).