Pressure Points

Munich RE

Risk Solutions

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2017 Edition ASME Boiler and Pressure Vessel Code Synopsis

The Codes and Standards Technical staff of Hartford Steam Boiler announces the publication of the 2017 Edition ASME Boiler and Pressure Vessel Code Synopsis.

ASME publishes a New Edition to the ASME Boiler and Pressure Vessel Code every two years containing revisions, additions and errata to the existing Code Requirements. As a value-added service to our clients and partners, our Codes and Standards staff summarize all changes to the Code in a Synopsis database, thereby eliminating a line-by-line comparison to determine the change. In many instances, Hartford Steam Boiler's Code and Standards staff have also provided some brief notes to clarify the revision to the Code and its potential impact on Code certificate holders.

The 2017 Edition ASME Boiler and Pressure Vessel Code Synopsis Report includes:

- Section I – Power Boilers
- Section III and Section XI – Nuclear
- Section IV – Heating Boilers
- Section VIII, Division 1, 2, 3 – Pressure Vessels
- Section XII – Transport Tanks

The Hartford Steam Boiler 2017 Edition ASME Boiler and Pressure Vessel Code Synopsis is available for customers through the HSB website – www.munichre.com/HSB/global-inspection

Ask the Engineer

Question: My Shop has received an order to build and supply a Power Boiler in accordance with ASME Section I, 2017 Edition. I noticed that Table PW-39-1 Mandatory Requirements for Postweld Heat Treatment of Pressure Parts and Attachments — P-No. 1 is revised in 2017 Edition. Is it acceptable to eliminate PWHT for all P-No. 1 materials in Section I?

Answer: The quick answer is No.

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Hartford Steam Boiler

However, according to the new rules, both PWHT and preheat are not required for P-No. 1 Group 1 materials when the calculated carbon equivalent (CE) is less than or equal to 0.45, and the nominal thickness as defined in PW-39.3 is 1.5 in. (38mm) or less. When the nominal thickness is greater than 1.5 in. (38mm), PWHT is still not required when the calculated CE is less than or equal to 0.45 and a minimum preheat of 250°F (120°C) is applied. The existing PWHT requirements have been retained for P-No. 1 Gr.2 and 3 materials. See General Notes (b) and (c) of Table PW-39-1.

Please note that the 2016 Edition of B31.1 [accepted under Section I, 2017 Edition] exempts all groups of P-No. 1 from PWHT provided a preheat of 200°F (95°C) is applied prior to welding on any nominal material thickness greater than 1 in. (25 mm) and when multiple layer welds are used when the nominal material thickness is greater than 3⁄16 in. (5 mm). Single layer or single pass welds may be exempted from PWHT, provided the WPS has been qualified using single pass welds with + or - 10% heat input and that all other conditions for exemption are met. Refer to Table 132.2 of B31.1 Exemptions to Mandatory Postweld Heat Treatment.

Question: My Shop has received an order to build and supply a Power Boiler in accordance with ASME Section I, 2017 Edition. Is it required to maintain material identification for all pressure part materials until the data report (Partial Data Report or Master Data Report) for the item containing the materials is complete?

Answer: Yes.

Section I historically never clearly mandated any identification and traceability requirements for materials used for pressure parts other than plates in PG-77. An inquiry was recently received questioning why wouldn't the existing requirements of PG-77 (currently applicable only for plates) be applicable to all pressure part materials? PG-77 rules have been revised in response to the inquiry. The title of PG-77 is now changed to "Material Identification" from "Plate Identification". A new paragraph PG-77.5 is added in PG-77 which now says : For other than plate material, the maintenance of identification shall at least be to the type of material. This can be achieved through any suitable method found acceptable to the Inspector such as, color coding, abbreviated marking, written record, etc. The existing requirements for plates are unchanged.

"... the maintenance of identification shall at least be to the type of material", as an example, is not meant to be construed that each and every tube or piece of material be marked even in identical tube subassemblies through all fabrication and heat treatment stages. Manufacturer's QC manual (Boiler Manufacturer or Part Manufacturer) needs to describe the process that they use to assure material identity for pressure part materials in a boiler (or part) such that it is possible to know what material is being included in the boiler/part and the appropriate WPS can be selected for welding. Yes, marking each piece is one acceptable way to maintain material traceability, but it is also possible to use color coding, as-built sketches, fabrication drawings, travelers, etc. to maintain the material identity.

Time is Running Out
Don't Lose Your ISO Certification
Transition to ISO 9001:2015

ISO 9001 is a standard that sets out the requirement for a quality management system. It helps businesses and organizations to be more efficient and improve customer satisfaction. A new version of the standards ISO 9001:2015, has been launched replacing the previous version ISO 9001:2008.

To maintain your certification to ISO 9001, you need to upgrade your Quality Management System to the new edition of the standards and seek certification to it. There is a three-year transition period from the publication (September 2015) to move to the 2015 version. This means that on September 15, 2018, a certificate to ISO 9001:2008 will no longer be valid.

What to do?

1. Become familiar with new standard
2. Identify organizational gaps
3. Develop an implementation plan
4. Provide training and awareness
5. Update existing quality management system to revised requirements
6. Contact certification body about transitioning to the new version at ISO_9000@HSB.com.

ISO 9001:2008	ISO 9001:2015
0. Introduction	0. Introduction
1. Scope	1. Scope
2. Normative reference	2. Normative reference
3. Terms and definitions	3. Terms and definitions
4. Quality Management System	4. Context of organization
5. Management responsibility	5. Leadership
6. Resource management	6. Planning
7. Production realization	7. Support
8. Measurement, analysis and improvement	8. Operation
	9. Performance evaluation
	10. Improvement

The ISO 9001:2008 will be superseded by the 2015 version effective September 15, 2018. The superseded standards will cease to be recognized and all certificates will be cancelled as of September 15, 2018. For those organizations that have not transitioned, you'll have to undergo full initial audits days, to the 2015 version of the standard, to regain certification.

If your organization is on an annual surveillance scheme with the auditing due after September 15, 2017, and you have not transitioned prior to or at that audit, a special audit, in between the annual audits, will be necessary.

To be certain there is enough time to complete the transition process, all certified organizations should be in contact with their Audit Team Leader to discuss and schedule the transition audit as soon as possible. For additional ISO 9001 transition information, email: ISO_9000@HSB.com.

Use of ILAC MRA for ASME Section III

The provisions of NCA-3126 were first added into the 2007 Edition of ASME Section III. This provided users of the code an alternative to survey and audit suppliers of subcontracted calibration services. Prior to these provisions, anyone looking to subcontract calibration services had to perform Commercial Grade Surveys consistent with the US NRC, 10 CFR Part 21 processes. Subsequent to development of NCA-3126 the US NRC approved this alternative in May of 2005, through a Safety Evaluation(SE) for Arizona Public Service (APS).

The original SE allowed for acceptance of accreditation of commercial-grade calibration services by a nationally-recognized accrediting body, using procedures consistent with international standards and guidelines, specifically those found in ANSI/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories."

National Voluntary Laboratory Accreditation Program (NVLAP), was the first nationally-recognized accrediting body used to accredit calibration laboratories in lieu of a supplier audit, commercial-grade survey, or in-process surveillance during performance of the accredited calibration services.

In their initial request APS further proposed that accreditation by an accrediting body recognized by NVLAP via a Mutual Recognition Arrangement (MRA) to be acceptable. In evaluating the proposed alternatives, the NRC examined the NVLAP accreditation program, administered by the National Institute of Standards and Technology (NIST), and the accreditation program administered by the American Association for Laboratory Accreditation (A2LA). Both accreditation bodies were signatories to the International Laboratory Accreditation Cooperation (ILAC).

In addressing this alternative for calibration labs, the NRC limited the use of the provisions approved by the APS SE to;

> *The calibration laboratory holds a domestic (United States) accreditation by any one of the following accrediting bodies, which are recognized by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA):*
>
> - *National Voluntary Laboratory Accreditation Program (NVLAP), administered by the National Institute of Standards &Technology;*
> - *American Association for Laboratory Accreditation (A2LA);*
> - *ACLASS Accreditation Services (ACLASS);*
> - *International Accreditation Service (IAS);*
> - *Laboratory Accreditation Bureau (L-A-B);*
> - *Other NRC-approved laboratory accrediting body.*
>
> *The accreditation encompasses ANS/ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories."*
>
> *The published scope of accreditation for the calibration laboratory covers the necessary measurement parameters, range, and uncertainties.*

The 2007 Edition of ASME Section III added NCA-3126 with similar provisions as the US Nuclear Regulatory Commission (NRC) but limited the use of calibration laboratories to the "National Voluntary Laboratory Accreditation Program (NVLAP), American Association for Laboratory Accreditation (A2LA), or other accrediting body recognized by NVLAP through the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition

Arrangement (MRA)." NCA-3126 requirements allowed users to only use US Domestic Laboratories.

As the use of NCA-3126 gained industry acceptance, many international users of the Code found that using only NVLAP or A2LA for their equipment calibrations was limiting. ILAC MRA, as of 2015, had over 90 signatories in 87 countries. Users of the Code working on items for US nuclear projects had to meet both Code and regulatory requirements as it pertained to the use of calibration labs. The only other option to use the provisions of NCA-3126 were use of "other accrediting body recognized by NVLAP through the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA)."

In order to understand what other accrediting body were recognized by NVLAP through the ILAC MRA, NVLAP was contacted. In their response, NVLAP stated that;

> *"(NVLAP) as a signatory to the MRA does, in effect, recognize that the accreditations issued by other signatories are equivalent. Normally, we (NVLAP) would recommend that citations like this directly reference the ILAC MRA, rather than have the recognition linked through NVLAP. That avoids the possible misperception that NVLAP operates a system for recognizing accreditation bodies."*

Although this may have not been the intent of NCA-3126, it allows ILAC MRA signatories other than NVLAP and A2LA.

In 2014, the Nuclear Energy Institute (NEI) drafted Technical Report NEI 14-05, for use by all signatories recognized through ILAC MRA and expanding to also include testing laboratories. NEI 14-05 was submitted to the NRC and approved in February 2015. ASME Section III updated the provisions of NCA-3126 and added NCA-3127 to reflect the updates made by NEI 14-05 in the 2017 edition of ASME Section III. These new code updates will provide international users more options for used a calibration laboratories and allows, for the first time, the use of ILAC MRA accredited testing laboratories.

Hartford Steam Boiler UK Limited – Expansion to Scope

In response to the expected increase in the use of Nuclear Power in the United Kingdom, UKAS, the United Kingdom Accreditation Service, launched a scheme of accreditation for Inspection Bodies to include Nuclear construction standards within their scope of approval. Hartford Steam Boiler UK Limited (HSB UK) is pleased to announce that after submitting an application to UKAS and satisfying all improvement actions, UKAS granted an extension of HSB UK's ISO 17020 accredited scope of boiler and pressure vessel inspection to include UK Nuclear work to ASME Section III, Division 1.

UKAS issued a revised HSB UK Schedule of Accreditation (Issue No. 004), which is now available on their website:

https://www.ukas.com/wp-content/uploads/schedule_uploads/00012/8452Inspection%20Body%20Single.pdf

The extension to scope incudes two (2) fields of Nuclear inspection. The first field of inspection is for Nuclear fueled power plants in the UK and manufacturing worldwide. The types of inspection include Nuclear island components and associated control and safety systems and inspections of new products, repairs and modifications.

The second field of inspection is for manufacturing inspection of Nuclear items of equipment, sub-assemblies and assemblies worldwide. The types of inspection include inspections of new Nuclear products within the scope of materials, pressure vessels, steam generators, piping and piping components. The extension to scope for the final on-site assembly is still pending approval by UKAS.

Both Nuclear fields of inspection will follow methods and procedures in accordance with Codes and standards – ASME Section III, Division 1, UK Regulations for Nuclear Installation and HSB UK's internal procedures.

This extension to scope strategically positions HSB to be able to enter the market for the upcoming UK Nuclear New Build projects, which are currently forecasted to run until 2030.

ASME Names Award after Former HSB Employee Wil LaRochelle

The American Society of Mechanical Engineers (ASME) recently named their first society level award for conformity assessment after Wil LaRochelle who was a long time employee of Hartford Steam Boiler (HSB).

The ASME Conformity Assessment Department announced the establishment of a new society level award. The Wilfred C. LaRochelle Conformity Assessment Award. The ASME Committee on Honors approved the formation of this award at the November 2016 meeting.

This award was presented by the ASME Conformity Assessment Department in honor of Wilfred C. LaRochelle and his contributions to the ASME Conformity Assessment activities over the course of 37 years, most notably as the Chair of Committee on Boiler and Pressure Vessel CA (CBPVCA), Chair of Committee on Nuclear Certification (CNC) and Chair of the Board on Conformity Assessment (BCA).

Wil was active in the promotion of ASME Conformity Assessment Programs worldwide, introduced many international organizations to the concept of ASME Conformity Assessment and successfully encouraged them to become active participants. His contributions will by felt be all involved in our programs for many years to come. This award will assist in recognizing an individual's distinguished service to the area of Conformity Assessment, including but not limited to the establishment, advancement and promotion of ASME's Product & Personnel Certification and Accreditation Program.

Wil was an experienced inspector, supervisor, member of the Hartford Steam Boiler Codes and Standards group and worked closely with ASME as part of HSB's contribution to safety of pressure vessels. Wil passed way in 2013 and this honor reflects the best of HSB's contributions to the society.

ASME Honors HSB's Jay Cameron

Jay Cameron, a member of the Hartford Steam Boiler Global Inspection and Engineering Services Codes and Standards team was the first recipient of the ASME Boiler and Pressure Vessel Committee on Materials (Section II) Gold Standard Award. This award is for "exemplary service to the BPV II Committee on Materials through project management, technical guidance, and diligence in the review of ballots. Mr. Cameron's contributions over the years have been essential to successful operation of the Committee."

Mr. Cameron has served on ASME committees for the past 23 years. This past April, he was elected to the Chairman of the BPV II Standards Committee.

ASME Three-Day Seminar

Introduction to ASME Section VIII, Division 1 and ASME Section IX Seminar. The seminar will cover the following:

Material	Design	Fabrication	Welding
Requirements	Basic Design Philosophy	Overview	Requirements
Recertification	Design Equations for Common Shapes	Material Control	Welding Procedure Qualifications
Documentation	Openings and Reinforcements	Joint Preparation	Processes
Identification	Toughness	Postweld Heat Treatment	Welding Performance Qualifications

Pressure Testing, Manufacturer's Data Report and More

Location	Dates
Baton Rouge, Louisiana	September 19-21, 2017
Philadelphia, Pennsylvania	October 10-12, 2017

To Register: https://bookstore.hsbct.com

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