

PRESSURE POINTS

The Official Newsletter of HSB  Global Standards

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HSB GLOBAL STANDARDS TRANSITIONS TO A NEW NOTIFIED BODY HARTFORD STEAM BOILER UK LIMITED

HSB Global Standards is pleased to announce that Hartford Steam Boiler UK Limited, part of the HSB Global Standards family, is now fully accredited in accordance with ISO/IEC 17020:2012 under United Kingdom Accreditation Services (UKAS) and has also been fully appointed as a Notified Body for the Pressure Equipment Directive 97/23/EC.

Since 2001, HSB Global Standards has been a recognized Notified Body under the name Hartford Steam Boiler International GmbH (HSBI) in Germany. HSB Global Standards has made the strategic decision to relocate the Notified Body to the United Kingdom in anticipation of growth in the nuclear power industry in Europe, particularly in the United Kingdom. While inspection opportunities exist for both nuclear and non-nuclear pressure equipment throughout the European Union, the UK Office of Nuclear Regulation has determined that Inspection Agencies involved in nuclear work must be accredited through UKAS.

HSB Global Standards will continue to operate in both the HSB UK location along with HSBI in Germany to support all of your global inspections needs. Please don't hesitate to contact your local HSB Global Standards Account Manager or International Code Services Specialist with questions.

HSB GLOBAL STANDARDS ESTABLISHES A BRANCH IN THE UNITED ARAB EMIRATES

Effective August 1, 2014, HSB Global Standards

established a branch office, Hartford Steam Boiler International GmbH – Abu Dhabi, located in the United Arab Emirates. HSB Global Standards performs inspections for the pressure equipment industry offering local availability, global coverage and technical expertise with consistent measurable quality. With the opening of the branch office in the United Arab Emirates, HSB Global Standards will be expanding its product offering in the region.

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“Pressure equipment demand is growing in the United Arab Emirates, driven predominately by the refining and petrochemical industries and manufacturing,” said Fred Bull, president, HSB Global Standards. “HSB Global Standards’ worldwide presence gives us the ability to manage third-party certification for virtually any type of pressure equipment anywhere in the world.”

“The establishment of a branch office in Abu Dhabi will strengthen our competitive position in the region,” said Fred Bull. “Owner/users of pressure vessel inspection services are increasingly demanding the ASME Code for equipment purchased domestically and abroad, and there is a recognized need for increased technical support of the formal implementation of ASME Code requirements, including stamping of pressure vessel equipment ordered to the Code.”

For more information, please contact Narayanan Sethu at Europe_Info@HSBCT.com

ASK THE ENGINEER

By Codes and Standards Group

An Explanation of ASME Section V (2013), T-150(d)

The addition of T-150(d) to the 2013 Edition of Section V has been the source of questions and misunderstanding since its debut.

T-150(d) includes requirements for **written NDE procedure qualification**. The various Articles of Section V have been revised in the last few years to include tables of

(continued on page 2)

examination method, in anticipation of the possibility of a referencing Code Section invoking a requirement to “qualify” written examination procedures.

For the most commonly used NDE methods, Section V addresses **written procedure qualification** in T-421.2 (UT), T-522.2 (UT), T-621.12 (PT), and T-721.2(MT), as well as in referenced Appendices. Note that Section V does not address procedure qualification for radiographic examination (RT).

In each of the above mentioned references, you will clearly see the introductory phrase: “When procedure qualification is required by the referencing Code Section...”

Likewise, T-150(d) begins: “When qualification of the written examination procedure is required by the referencing Code Section...”

Therefore, we need to check whether the Referencing (Construction) Codes impose requirements for NDE procedure qualification.

Starting with Section I, surface examination methods refer to “T-150” in A-260 for magnetic particle examination (MT) and A-270 for liquid penetrant examination (PT).

Paragraphs A-260.1 and A-270.1, respectively, mention “examination shall be performed in accordance with a written procedure, certified by the Manufacturer to be in accordance with the requirement of T-150 of Section V.” This has led some readers to believe that all of T-150 applies. Certainly, all of T-150 must be read; however, when the introductory phrase of T-150(d) is encountered, we would need to find references in Section I where “**qualification** of a written procedure” is required. A careful search of Section I will reveal no such references, therefore T-150(d) has no effect on MT or PT procedures or personnel qualifications used in Section I Power Boiler construction.

Ultrasonic examination (UT) is referred to in PW-11. This paragraph further directs the reader to PW-52. PW-52.1 states that ultrasonic examination is to be performed to the requirements of Section V, Article 4, Mandatory Appendix VII, “Ultrasonic Examination Requirements for Workmanship Based Acceptance Criteria”. Mandatory Appendix VII does not invoke any procedure qualification requirements, so, T-150(d) would not apply.

Section I has approved, but not yet published, an Interpretation to clarify that written nondestructive examination procedures that are required by Section I need not be qualified in accordance with Section V, Article 1, T-150(d).

The original question and reply follow:

Q Is it mandatory that written nondestructive examination procedures that are required by Section I be qualified in accordance with Section V Article 1 T-150(d)?

A No.

NOTE: Section I Manufacturers who invoke the alternative rules of Code Case 2235-12 are cautioned that UT procedure qualification is required as detailed in the Code

Case.

For Section VIII, Division 1 surface examination methods refer to “T-150” in Mandatory Appendix 6 for magnetic particle examination (MT) and Mandatory Appendix 8 for liquid penetrant examination (PT).

Paragraphs 6-1(c) and 8-1(c), respectively, mention “examination shall be performed in accordance with a written procedure, certified by the Manufacturer to be in accordance with the requirement of T-150 of Section V.” Again, this has led some readers to believe that all of T-150 applies. Once more, all of T-150 must be read; however, when the introductory phrase of T-150(d) is encountered, we would need to find references in Section VIII, Division 1 where “**qualification** of a written procedure” is required. A careful search of this Code will reveal no such references, therefore T-150(d) has no effect on MT or PT procedures or personnel qualifications used in Section VIII, Division 1 pressure vessel construction.

Ultrasonic examination (UT) is referred to UW-53. This paragraph further directs the reader to Mandatory Appendix 12. Similar to the wording for MT and PT, paragraph 12-1(c) appears to invoke all of T-150. Just as in the previous MT and PT discussions, ultrasonic examination referenced in UW-53 does not “turn on” **qualification** of written (ultrasonic examination) procedures by any reference. The conclusion is that T-150(d) does not apply to UT performed to the requirements of UW-53.

Section VIII, Division 1 will publish an Intent Interpretation and revise Appendices 8-1(b) and 12-1(b) to likewise clarify that examination procedures need not be qualified in accordance with paragraph T-150(d).

The original question and reply are shown below:

Q Is it the intent of paragraphs 8-1(b) and 12-1(b) to require qualification of examination procedures in accordance with paragraph T-150(d) of Section V, Article 1?

A No.

As a result of Question and Reply, revisions to Appendix 8 and Appendix 12 have been made, which will be published in the 2015 Edition of Section VIII, Division 1.

When “UT in lieu of RT” is performed under UW-52(d) (4), there is a different conclusion. UW-52(d)(4) refers to Section VIII, Division 2, paragraph 7.5.5. Subparagraph 7.5.5.1 states, “...ultrasonic examination shall be performed in accordance with a written procedure conforming to the requirements of Section V, Article 4, Mandatory Appendix VIII.”[“Ultrasonic Examination Requirements for a Fracture Mechanics Based Acceptance Criteria”]. In this Appendix, paragraph VIII-421.2 requires Mandatory Appendix IX be used. The Appendix IX reference is where requirements for the **qualification** of a UT written procedure are detailed.

In conclusion, T-150(d) only applies for written ultrasonic examination procedures invoking the requirements of Section

V, Article 4, Mandatory Appendix VIII for Section VIII, Division 1 construction per the 2013 and prior Editions / Addenda.

If you have any further comments or questions, please contact Alex Garbolevsky, Sr. Engineer II, at (860) 722-5098 or Alex_Garbolevsky@hsbct.com.

The development NCA-3800 and the requirements of the Nuclear Material Supply Chain

The nuclear industry and ASME have evolved the standards in providing source material and material for use in components for nuclear application ensuring the highest degree of quality in the supply chain. Source material is defined as metallic products used by a Material Organization or Certificate Holder in a product form conversion process in the manufacture of material [NCA-3851.2(a)(1)] or in a qualification process based on test and examination to the requirements of the material specification [NCA-3855.5(a)(2) and NCA-3855.5(a)(3)]. For Section III, Division 1, material is defined as metallic materials manufactured to an SA, SB, SFA, or any other material specification permitted in Section III and that are manufactured, identified, and certified in accordance with the requirements of Section III.

In the 1970s, ASME developed the requirements of Section III, Division 1 and 2 General Requirements, NCA-3700 which would later become NCA-3800. Until this point much of the responsibility for the quality of materials was with the certificate holders that fabricated components. This change transferred those responsibilities to the actual manufacturers and suppliers of materials. These original requirements were based on applicable provisions of the 18-criteria of 10CFR50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," and ANSI/ASME N45.2, "Quality Assurance Program Requirements for Nuclear Power Plants."

In the 1990's, in order to address widespread industry confusion, provisions of NCA-3800 were revised to combine classifications of material manufacturer and material supplier to Material Organizations. NCA-3800 also no longer contained 18 specific criteria, because it had been reorganized to be more applicable to the manufacture and supply of material.

ASME presently certifies Material Organizations through the issuance of a Quality Systems Certificate (Materials). These organizations are commonly known as "Certified Material Organizations (CMO)" or "QSC Holders". The Quality System Certificate is issued for a period of three years. The certificate specifies the scope, limitations of work, and location(s) for which the Material Organization is certified by ASME. ASME subjects QSC Holders to a planned audit program over the three year life of the Certificate.

In addition to QSC Holders, N-type Certificate Holders may also provide material to the nuclear industry if material organization, manufacturing or supply is included within the

scope of their ASME Certificate of Authorization. N-type Certificate Holders may also provide material through the provisions of NCA-3561(d) and NCA-3820 (c). The portions of an N-type Certificate Holder's Quality Assurance Program that deal with material are audited annually by an Authorized Nuclear Inspector Supervisor and are included as part of the triennial ASME Nuclear Survey.

A material organization qualified by a QSC Holder (CMO) or N-type Certificate Holder to provide material to the nuclear industry is known as a Qualified Material Organization (QMO). When a QMO is qualified they are limited to furnishing material, source material, or subcontracted services only to the CMO or N-type Certificate Holder that evaluated and qualified their program. CMOs, N-type Certificate Holders, and QMOs use source material in a product for conversion process, when included in the scope of activities, to manufacture material. Examples of product forms include bars, rods, plates, castings, tubes, etc. Source Material, known as Qualified Source Material, can come from an approved supplier approved in accordance with the requirements of NCA-3800. Source Material, known as Unqualified Source Material, is not produced by a supplier approved in accordance with the requirements of NCA-3800. Unqualified Source Material can only be used if qualified through the provisions of NCA-3855.5, by CMOs, N-type Certificate Holders, and QMOs.

Although CMOs, N-type Certificate Holders, QMOs, and approved suppliers all adhere to the requirements of NCA-3800 through survey, qualification, or audit, there still may be other requirements that must be addressed beyond the scope of Section III. In addition to a quality assurance program, regulatory or enforcement agencies requirements may also apply. For example, although the US Nuclear Regulatory Commission recognizes Section III as meeting the requirements of 10CFR50 Appendix B, CMOs and N-type Certificate Holders must verify implementation of their ASME certified vendors quality assurance program through audit or other actions, as described in NRC Information Notice 86-21 and supplements 1 & 2.

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HARTFORD STEAM BOILER RECOGNIZED BY ASME DURING CELEBRATION OF THE 100TH ANNIVERSARY OF THE ASME BOILER AND PRESSURE VESSEL CODE

The American Society of Mechanical Engineers (ASME) recently celebrated the 100th anniversary of issuing the ASME Boiler and Pressure Vessel Code. In recognition of a century of commitment to public safety, ASME honored The Hartford Steam Boiler Inspection and Insurance Company (HSB) for its significant contributions to the drafting, adoption and enforcement of the original Code.

HSB, a founding contributor to the ASME Boiler and Pressure Vessel Code, was one of four organizations honored; the others included: Babcock & Wilcox Company, the Commonwealth of Massachusetts, and the National Board of Boiler and Pressure Vessel Inspectors.

“From its inception in 1866, The Hartford Steam Boiler Inspection and Insurance Company (the parent company of HSB Global Standards) provided inspection and engineering services to users of steam powered equipment,” said Kenneth Balkey, senior vice president, for standards and certification. “From the later part of the 19th century through the turn of the 20th century, HSB compiled statistics and analysis of boiler explosions and their consequences. It was these statistics that led

to the first state and city boiler rules, the Hartford Standards, and eventually to the creation of a single set of rules for construction – the ASME Code.”

Hartford Steam Boiler and HSB Global Standards contributed their knowledge then, and continue to do so by supporting numerous Boiler and Pressure Vessel Code committees.



Accepting the award on behalf of HSB Global Standards, left to right: Oberst Mulet, Gerald Foster, Thomas Pastor, Jay Cameron, Tim Nuoffer, Barry Bobo, Sandy Babka, Alex Garbolevsky, Fred Bull, Mike Lockwood, Jayaram Vattappilly, Raymond Spuhl, and Paul Coco.