

PRESSURE POINTS

The Official Newsletter of HSB  Global Standards
Code Services

MAY 2010

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UPCOMING EVENTS

By Marketing

In an effort to promote our services to new and existing customers, we participate in a number of industry events each year.

Many of our staff that focuses on Code and Standards development will be attending ASME's Boiler & Pressure Vessel Code Committee meeting and the 79th General Meeting of the National Board of Boiler & Pressure Vessel Inspectors held this year in San Antonio, Texas, USA on May 3-6, 2010. Our participation provides feedback for continued code development from an inspector's point of view and a way to gain feedback from our customers.

Internationally, HSB Global Standards will be attending, exhibiting, and presenting at the 18th International Conference on Nuclear Engineering (ICONE18). This year, the conference is being held in Xi'an, China on May 17-21, 2010. ICONE18 is a technical conference with hundreds of technical papers related to the safe use of nuclear energy for electric power. HSB Global Standards along with our local office, HSB Technical & Consulting Service (Shanghai), will be exhibiting and presenting a comparison between ASME and RCC-M nuclear design and construction codes.

HSB Global Standards along with our European office, Hartford Steam Boiler International GmbH, will be attending, exhibiting (booth V32) and presenting at Power Gen / Nuclear Power for Europe in Amsterdam. This June 2010 conference is as much a technical conference as a showcase for suppliers to exhibit products and services to the European power generation industry. Driven by climate change and the need for electric power, nuclear power generation is a popular theme. This year,

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WHAT'S NEW WITH NUCLEAR IN THE U.S.

By Nuclear Codes Services

Nuclear Option

President Obama called for a "new generation of clean, nuclear plants" in his State of the Union address in January 2010. In the speech, he made the announcement that his administration has approved an \$8.3 billion loan guarantee to build the first power plant in the US in three decades. The loan guarantee for the new project is to be taken out of the \$54 billion Obama set aside for nuclear loan guarantees in his 2010 budget - and it leaves \$46 billion more to be allocated to other nuclear projects. The \$8.3 billion nuclear loan guarantee has been awarded to Southern Co. to build twin nuclear reactors at Plant Vogtle in Georgia.

Energy Secretary Chu is also very much in support of nuclear power as stated on his Facebook page "no single technology will provide all of the answers. Wind and solar now provide about 3 percent of our electricity, compared to 20 percent for nuclear. While we are working as hard as we can to promote energy efficiency in every sector of America, it is likely that our energy demand will continue to rise. In fact, the Energy Information Administration projects an almost 20 percent increase in overall energy demand and over 30 percent increase in electricity demand over the next 25 years under current laws. If we want to make a serious dent in carbon dioxide emissions - not to mention having cleaner air and cleaner water - then nuclear power has to be on the table."

What does all this mean?

The last two power plants to be built in the U.S. were the Watts Bar plant, which began construction in 1973 and commercial operation in 1996, and the River Bend plant, which was built in 1977 and went online in 1986. Because we will see the first nuclear power plant in this country break ground in nearly three decades, thousands of construction jobs will be created and the need for many products currently being manufactured will grow.

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What's New with Nuclear... (continued from page 1)

Nuclear plants are comprised of hundreds of components and subcomponents. Nuclear manufacturers supply the concrete, pumps, wires, instruments and many other components necessary to support current and future nuclear power projects. These manufacturers currently supply millions of dollars of products annually to the 104 nuclear reactors operating in the U.S. today.

There has already been several billion dollars spent on new plant activities, including the ordering of long-lead components. However, as the resurgence of nuclear energy across the country and around the world continues, the nuclear industry needs a well developed and dynamic supply chain to support nuclear manufacturing. Even though many new manufacturers are entering the industry, more manufacturers are needed. There are significant opportunities available for companies interested in serving this growing market.

HSB Global Standards Nuclear Capabilities and How We Can Help

Many components of a nuclear plant, particularly those critical to reactor safety, are subject to specific manufacturing standards. These standards ensure that the structures, systems, components and controls of a facility can be relied on to remain functional and follow design basis under rigorous conditions. Components subject to these standards are often referred to as "nuclear-grade" or "safety-related" components. Facilities that manufacture these components must have Quality Assurance (QA) programs in place to ensure that the standards are met. HSB Global Standards has an experienced staff that can help companies understand these requirements, evaluate their current program to nuclear manufacturing quality assurance requirements and help develop their nuclear QA program. Our staff will not only help develop the program but they will also ensure that the facilities are ready for any required industry or vendor supplier audits.

For companies looking to manufacture pressure retaining components that require third party inspection, HSB Global Standards is the largest nuclear Authorized Inspection Agency (AIA). We are the worldwide leader in providing AIA and consulting services to designers, manufacturers and construction firms throughout the nuclear industry. We have been providing qualified nuclear inspections since the NRC endorsement of the ASME nuclear codes. In addition, we have been active in ASME Section III code activities since the 1960s and have HSB Global Standards personnel sitting on over 15 ASME nuclear code committees including the vice chair of the Committee on Nuclear Certification.

HSB Global Standards can assist companies in achieving their nuclear accreditation by guiding them through the step-by-step accreditation process. We can also offer local resources to provide timely on-site inspections and support of a wide range of inspection services for nuclear components and nuclear power plants including:

- Authorized nuclear and in-service inspection services
- Spent fuel services including inspection, surveillance and auditing
- Design support meeting ASME code
- Subcontractors surveillance
- Complete certification and training in ASME

From a company meeting nuclear quality assurance requirements to stamping their first component, HSB Global Standards can assist with the entire compliance process. Our knowledgeable staff, located worldwide, has saved our customers millions in rework, construction delays, and other costs associated with noncompliance. Compliance is critical to this growing market and HSB Global Standards, undoubtedly, has the nuclear capabilities to help companies succeed.

For additional information, please email:
Nuclear_Services@HSBCT.com

ASK THE ENGINEER

By Codes and Standards Group & TRS

Q My company mass produces small air receivers following the special provisions given in UG-90(c)(2) and Appendix 35 of Section VIII, Division 1. We recently received an order to fabricate six 300 gallon tanks that will take up to two weeks to fabricate. Would it be acceptable to fabricate these six vessels using the same inspection and quality control procedure used for the fabrication of the air receivers, including making some of the inspections that would normally be carried out by the Authorized Inspector under UG-90(c)(1) conditions?

A The special rules for mass produced pressure vessels given in Appendix 35 address the situation where the volume of production is so high that it is not practicable for the Authorized Inspector (AI) to perform the duties normally assigned under UG-90(c)(1). In this situation, the Manufacturer would develop an inspection and quality control procedure under which he would carry out some of the inspection duties normally performed by the Authorized Inspector. Per 35-3(c) construction of two or more pressure vessels per shift at a rate of production that affords the Inspector sufficient opportunity to perform the required duties given in UG-90(c)(1) does not qualify for mass production. For your situation, since you're estimating the fabrication of these six tanks to take two weeks, the rules of UG-90(c)(2) and Appendix 35 would not apply, and these vessels would be constructed under UG-90(c)(1), including full inspection by the AI as defined in this paragraph.

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Q Under what conditions, can my ASME Section VIII, Division 1 pressure vessel be installed in Brazil?

A ASME Code Section VIII, Division 1 is generally recognized as an acceptable design and construction code provided that the requirements of Brazilian Regulation NR-13 are also met. In order to meet this requirement, a Brazilian Registered Engineer (BRE) must perform a review of the complete technical package, including, but not limited to:

- Design/construction drawings
- Design calculations
- Fabrication records/documentation
 - Material test reports
 - Weld procedures, procedure qualification records and welder qualifications
 - Test reports for NDE and hydrostatic testing
- Manufacturers Data Report

An additional nameplate may be required, or the following information added to your existing ASME nameplate:

- Manufacturer's name
- Identification/Serial number
- Maximum allowable working pressure
- Hydrostatic test pressure
- Design code and edition year

There is also a requirement for the BRE to perform an internal and external inspection of the vessel and a hydrostatic test at the location of installation. The hydrostatic test may be waived based on technical justification.

Should you have any additional questions, please contact your regional TRS account manager, or visit www.HSBGlobalStandards.com

Upcoming Events... (Continued from page 1)

our European office will present "The Steps Needed to Obtain an ASME Certificate of Nuclear Authorization".

Over this summer in the USA, Technical Resource Support (TRS) will be providing public seminars focusing on topics of international code for manufacturers interested in exporting pressure vessels to various countries around the world.

The scheduled dates for the public seminars are:

- Tulsa, Oklahoma - June 10th
- Atlanta, Georgia - July 15th
- Portland, Oregon - August 19th
- Pittsburgh, Pennsylvania - September 23rd

For more information, please see our website www.HSBGlobalStandards.com or send a question to: edu_svcs@HSBCT.com

PRESSURE EQUIPMENT DIRECTIVE

Ten Steps to Compliance

Step 1: Obtain a copy of the Pressure Equipment Directive (PED) and become familiar with its layout, language and contents. The PED is available on the internet with free copies obtained on the following web sites:

<http://www.tukes.fi/en/Toimialat/Pressure-equipment/>
http://ec.europa.eu/enterprise/sectors/pressure-and-gas/pressure-equipment/index_en.htm#h2-pressure-equipment

Step 2: Determine whether or not your pressure equipment falls within the scope of the PED. The PED applies to pressure equipment subject to a maximum allowable pressure (PS) exceeding 0.5 bar (7.25 psi).

Step 3: Obtain copies of supporting standards. Based on your manufacturing capabilities, there may be a need to obtain specific Standards to support additional PED requirements for welding procedures and performance qualifications, as well as, NDE.

Step 4: Establish the hazard category of your pressure equipment and determine the conformity assessment procedure (module) you intend to apply. You will calculate your hazard category using the pressure equipment's design pressure, volume and fluid type. Once the hazard category is established, you will need to choose a conformity assessment module which will help define the process to be used in order to obtain PED certification. Your choice of module may be influenced by variables such as the volume of production, whether a quality-system based or inspection-based system is more appropriate, or whether serial production is a consideration. HSB Global Standard offers a 4 Easy Steps PED Selection Guide to help you with the hazard categorization process.

Step 5: Establish an Agreement (Contract) with a Notified Body. For pressure equipment classified above Hazard Category I, you will need the services of a Notified Body.

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Pressure Points is published by HSB Global Standards

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Ten Steps to Compliance... (Continued from page 3)

Notified Body services for HSB Global Standards customers are provided by HSB International GmbH, with inspection services provided locally.

Step 6: Prepare a hazard analysis and technical documentation appropriate for the Module selected to fabricate your pressure equipment. The technical documentation file typically includes design calculations, detailed drawings, material list and/or bill of material, Particular Material Appraisals (PMAs), hazard analysis, and operating instructions. The requirements for supporting documentation are more stringent than that required by the ASME Code.

Step 7: Ensure that welding procedures and personnel are properly qualified and that NDE personnel are approved. When applicable, develop welding procedures and prepare for the qualification of welders and welding operators. ASME Section IX may be used for the development and qualification of welding procedures and personnel. However, the testing of the procedure and personnel test coupons must also comply with any additional tests required by the referenced harmonized standards. NDE personnel, who perform RT, UT, MT and/or PT examinations required by the code of construction for category III and IV pressure equipment are required to be approved by a Recognized Third Party Organization or Notified Body. SNT-TC-1A, CP 189 or ACCP "approvals" alone are not acceptable.

Step 8: Ensure that the materials selected for fabrication comply with PED requirements. Materials are an area of special concern and potential problems. If harmonized product standards are not used to comply with the PED, materials will need a Particular Material Appraisal (PMA).

Step 9: Conduct in-process fabrication inspections, hydrostatic test and final assessment, with the involvement of a PED Inspector, if applicable. Depending on the module(s) selected by the manufacturer, arrangements for inspection and/or audit visits by Notified Body personnel are required in order to verify compliance with the requirements of the PED. It is a contractual requirement that PED manufacturers keep their Notified Body informed of their PED equipment production schedules.

Step 10: Complete the manufacturer's Declaration of Conformity and CE Marking. Once the final assessments have been completed and the equipment complies with the provisions of the PED, the manufacturer is required to draw up a Declaration of Conformity. European Member States may require the Declaration of Conformity and Operating Instructions to be provided in one of its official languages. Once the Declaration of Conformity is completed, the CE Marking may be applied to the pressure equipment. The CE Marking will need to be affixed in a visible, easily legible and indelible fashion.

For additional information on the Pressure Equipment Directive, as well as, other International Codes or Standards, please contact your regional Technical Resource Support (TRS) Account Manager or visit our website at www.HSBGlobalStandards.com.

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Hartford, CT 06141-0299

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