

## PMSTPCOL PEmails

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**From:** Tai, Tom  
**Sent:** Wednesday, September 21, 2011 1:43 PM  
**To:** Scheide, Richard  
**Cc:** STPCOL; Price, John E  
**Subject:** STP - Excerpt from ASME Comparison Guide

Dick,

Below are excerpts from the ASME comparison guide pertaining to design specifications. We can discuss later.

### **Page 161, Section 4.3, Companion Guide To The ASME Boiler and Pressure Vessel Code**

*The Design Specification is a document that identifies the conditions for which pressure vessel must be designed and fabricated. This is the only means by which to specify loads to the designer of the equipment. Section III Codes that address individual components, and therefore the user must identify the design loads to the manufacturer of the component, because only the user or the system engineer understands the service applications for each component.*

*Every Section III components requires a Design Specification certified by a RPE qualified to the provisions of the Code. This certification is to ensure the participation by a knowledgeable engineer who could understand the service conditions, the stress analysis required for the loading conditions, and the meaning of the different classifications of stresses.*

*The writer of the Design Specification cannot know all loads that will occur during the life of the equipment, but the system engineer responsible for identifying design conditions, is capable of using good engineering judgment so the probable loads can be enveloped. It is probable that some loads may occur in operation that exceed the specified loads stated in the Design Specification. This does not invalidate the Code Stamp since higher than designed loads are usually accommodated by the large design factor used for the equipment. However, the user should determine the cause of the higher loads and possibly take actions to mitigate.*

*The Design Report is often referred to as "calculations" and that was why it use to be called a "Stress Report." The term was changed to Design Report in 1978 to convey the requirement that the engineer is responsible for more than just stress analysis. The engineer is responsible for all aspects of the design as they may relate to the fabrication. The Design Report is developed to ensure that the equipment can resist all specified loads within the allowable stress limits. The RPE reviews the drawings and other documents to ensure that the requirements of the Code design, specifications, and the Design Report are met.*

*Furthermore, the RPE is responsible for correctly using the specified design loads in the calculations or stress analysis. The engineer must fully understand any computer program used, including all assumptions in the program, and the accuracy of the output.*

### **Page 167, Companion Guide To The ASME Boiler and Pressure Vessel Code**

*The Design Specification loading conditions are an engineer's "best estimate" of what is expected to occur in service. Often the expected loads are increased by a small factor, 10%, to account for unknowns. The Code-required Design Report must then show that the stresses due to Design Loads do not exceed the Code-allowable stresses.*

### **Page 181, Section 4.3, Companion Guide To The ASME Boiler and Pressure Vessel Code**

*NCA-3420 provides a list of the responsibilities of the Division 2 N Certificate Holder for satisfying provisions of Section III. Basically, the N Certificate Holder is responsible for compliance of construction of components and parts with the Design drawings, the Constructions Specification, and all Section III, Division 2 requirements.*

Regards

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**From:** Tai, Tom

**Created By:** Tom.Tai@nrc.gov

**Recipients:**

"STPCOL" <STP.COL@nrc.gov>  
Tracking Status: None  
"Price, John E" <jeprice@STPEGS.COM>  
Tracking Status: None  
"Scheide, Richard" <rhscheide@STPEGS.COM>  
Tracking Status: None

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