



## Marine Safety Center Technical Note

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Date: 28 February 1994

SSIC: 16703/46 CFR 54  
16703/NVIC 10-81  
MTN: 01-94

Subj: Acceptance Criteria for Pressure Vessels on Reflagged Vessels

Ref: (a) NVIC 10-81 CH1, "Coast Guard Certification and Inspection of Certain Categories of Existing Vessels"

1. PURPOSE: The current Coast Guard policy for accepting pressure vessels on existing vessels that are being brought under U.S. Flag and requesting a Coast Guard Certificate of Inspection is outlined in ref. (a). Basically, the criteria is: design to an acceptable national standard, certification by a recognized classification society and successful operating experience. In addition sufficient evidence must be submitted that demonstrates a factor of safety equivalent to that of the ASME Code but lesser factors of safety will be accepted provided they exceed 3:1.

2. DISCUSSION:

a. NVIC 10-81 was published more than 10 years ago and since then the Coast Guard has reviewed numerous submittals of pressure vessels built to a myriad of foreign national standards. In many cases the design factor of safety is equivalent or very close to ASME requirements. Most importantly in every case the design factor of safety was shown to be at least 3:1. Based on this experience the MSC has confidence with foreign national standards and acceptance by classification societies.

b. One of the pillars of Maritime Regulatory Reform is harmonization of USCG regulations, IMO requirements and classification society rules and accepting of these standards as equivalent to Coast Guard regulations. The long term goal is a single set of standards for all vessels regardless of flag.

c. A cornerstone of the new Coast Guard safety regime is the use of another set of eyes or hired hands such as registered professional engineers or ABS Americas who certify vessel designs comply with applicable Coast Guard regulations. The review and acceptance of the original pressure vessel design by the classification society is a very similar concept.

d. Lastly, MSC must optimize its plan review efforts by concentrating the systems with the greatest risk to safety or that are most critical to the safety of the vessel, crew, passengers and the environment.

e. Based on the above, the pressure vessel acceptance criteria outlined in reference (a) is appropriate except for the repetitive review of calculations to verify design factors of safety. Therefore, meeting this criteria should be enough unless there is clearly a greater risk or danger associated with a pressure vessel in high pressure service, low temperature service or containing of dangerous substances. For pressure vessels in these categories a more stringent acceptance criteria is appropriate to account for the higher risk.

3. ACTION: The acceptance criteria for all pressure vessels on reflagged vessels will be a proof of design to an acceptable national standard, certification by a recognized classification society and successful operating experience. For class I, I-L, II-L pressure vessels and those containing dangerous substances the acceptance criteria will also include submission of calculations verifying a design factor of safety of at least 3:1 based upon the minimum tensile strength at the design temperature. Additionally for class I, I-L and II-L pressure vessels sufficient documentation or certification that the acceptable standard includes requirements for general design and independent third party shop inspection with approval of design, welding procedures, welder performance, heat treatment and non destructive examination must be submitted.



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