

VARIANCE

**No. VA09-001
(IB09-003)**

Subject Use of 2007 Edition ASME Section VIII Division 2 Code -
Variance to Sections 6(d)(i) and (ii) of the Pressure Equipment Safety
Regulation (AR 49/2006 consolidated up to AR 150/2008)

Date of Issue January 12, 2009

This Variance applies to Province-wide Variance

Reason for variance In accordance with Section 38 of the Safety Codes Act and Section 23 of
the Pressure Equipment Safety Regulation, a variance is hereby issued with
respect to the use of the 2007 edition of the ASME Boiler and Pressure
Vessel Code Section VIII Division 2 (hereunder referred to as "the Code") in
Alberta. This Variance supersedes VA07-007 issued July 3, 2007.

Details of variance

Until further notice otherwise, pressure vessels constructed in accordance
with the Code may be operated in Alberta provided the following provisions
are met:

1. In general, use of Part 5¹ of the Code "Design by Analysis
Requirements" to over-ride provisions under Part 4 "Design by Rule
Requirements" will be prohibited. Use of Part 5 to supplement or in
addition to Part 4 requirements is not considered as using Part 5 to
over-ride requirements under Part 4 (e.g., Use of Part 5 for fatigue
analysis when required in accordance with a User's Design
Specification is not considered as using Part 5 in contravention of this
specific provision of the Variance).
2. Notwithstanding Provision #1 above, for exceptional and fully justified
circumstances, a design submission may be made utilizing Part 5 and,
if found acceptable, a site- and situation-specific Variance for that
particular design may be granted by the Administrator under Section 38
of the Safety Codes Act.

¹ "Part" refers to the different parts of the Code and the annexes to the respective Parts of the Code. In this case,
Part 5 refers to "Design by Analysis Requirements" and all associated annexes including Annex Part 5A to Annex
Part 5F of the Code.

3. Two significantly different fatigue analysis methodologies are included in Part 5 of the Code with one being the alternative to the other. Until such time that it can be ascertained that one method will provide more accurate results consistently, should fatigue loading be expected, analyses shall be carried out using both methods and the more conservative result will govern.
4. A professional engineer who submits a pressure vessel design in accordance with the Code or subsequent design submissions, including for alterations, major repairs or change of ownership, must have a track record as a pressure vessel designer and the design submission documents must provide supporting evidence (e.g., curriculum vitae with a list of previous comparable pressure vessel designs).
5. As part of the design registration submission, the User's Design Specification shall include a program for lifetime monitoring of the pressure vessel constructed to the Code.
6. As part of the User's Design Specification of the pressure vessel, specific limits or conditions, including cyclic and other conditions of individual components or parts of the pressure vessel, shall be defined to allow proper monitoring of the pressure vessel to take place during operation of the pressure vessel.
7. A Professional Engineer who certifies the User's Design Specification, on behalf of the owner, shall be independent of the pressure vessel manufacturer.
8. A Professional Engineer involved in the application of the Code in the Province of Alberta, including but not limited to the certification of the User's Design Specification or Manufacturer's Design Report, shall meet the requirement of Section 1(2) of the Pressure Equipment Safety Regulation².
9. An owner of a pressure vessel constructed to the Code shall have in place a Pressure Equipment Integrity Management program accepted and registered by ABSA as provided for under the Pressure Equipment Safety Regulation. The Pressure Equipment Integrity Management program shall specifically address the use of such special pressure vessels including:
 - a. certification of operating personnel. There shall be a training system in place and, as part of the system, a procedure shall be in place to verify that the operators of the pressure vessel have sufficient knowledge of the User's Design Specification and the Manufacturer's Design Report for the pressure vessel;

² Section 1(2) of the Pressure Equipment Safety Regulation states that a "Professional Engineer means a person who is registered as a professional engineer and authorized to practice engineering in any province or territory of Canada or in any state of the United States of America".

- b. verification that the operators having a clear understanding of how cyclic service is defined and monitored;
 - c. procedures for documentation and reporting of incidents when operation of the vessel deviates from the User's Design Specification limits as non-conformances and continued operation of the pressure vessel after such an incident shall be properly justified and may be subject to regulatory approval;
 - d. provisions for accurate and continual monitoring of operating parameters and record keeping to comply with the User's Design Specification and Manufacturer's Design Report limitations which need to be clearly stated and specified in the first place;
 - e. maintenance of information and documentation affecting the safe use of the pressure vessel for the life of the pressure vessel. The records shall include documentation such as the User's Design Specification, Manufacturer's Design Report, fabrication documents, operation monitoring results and other records that are required to be maintained by the vessel owner³; and
 - f. the media and system used for record keeping must be in a form that will allow the information to be retrievable and legible. The record keeping system shall be subject to internal audit.
10. An owner of a pressure vessel built to the Code shall, in the case of change of ownership of the plant, transfer to the new owner all records as required under Section 36(3) of the Pressure Equipment Safety Regulation.
 11. On a change of ownership of a pressure vessel constructed to the Code, the new owner shall have a Professional Engineer verify and certify the acceptability of the original User's Design Specification as well as the condition of the pressure vessel or prepare a new User's Design Specification within the limitations of the Manufacturer's Design Report and the condition of the pressure vessel. The new owner shall submit the certified document to ABSA and retain a copy as part of the owner's Pressure Equipment Integrity Management program record.
 12. In the case of a pressure vessel which is built to the Code and which is sold individually, not as part of a plant, the User's Design Specification and the Design Registration will be rendered void since the pressure vessel will no longer be operated as originally intended. The design of the vessel shall be resubmitted for registration.

³ Note: Sections 41 & 42 of the Pressure Equipment Safety Regulation require that the owner must maintain "equipment records" and Section 1(1)(k) of the Regulation states that "equipment record includes design information, data reports, inspection plans, and integrity assessment, repair and alteration records".

<i>Variance is specific and non-precedent setting</i>	This Variance is specific and sets no precedent.
<i>Authority under which the Variance is being issued</i>	Section 38(1) of the Safety Codes Act, Chapter S-1
<i>Advisement of Offence</i>	Non-compliance with the requirements of this Variance is an offence under the Safety Codes Act.
<i>Approval of Administrator</i>	K.T. Lau, Ph.D., P.Eng. Administrator Pressure Equipment Province of Alberta
<i>Accredited organization employing the Administrator</i>	ABSA the pressure equipment safety authority 9410 – 20 Avenue Edmonton, Alberta T6N 0A4 Phone:(780) 437-9100 Fax: (780) 437-7787
<i>Submission of a copy of Variance to the Safety Codes Council</i>	A copy of this Variance will be submitted to: Safety Codes Council 1000, 10665 Jasper Avenue Edmonton, Alberta T5J 3S9
<i>Explanation of variance</i>	A Variance is written permission issued to build, install, process or otherwise act in a manner not consistent with the specific requirements of an applicable code, standard or regulation but which provides, in the opinion of the issuing Administrator, an equivalent level of safety to persons and property.