Alberta Municipal Affairs

ABSA
the pressure equipment safety authority

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Coils in Pressure Vessels

This information bulletin provides guidance to manufacturers who install coils in pressure vessels designed and constructed to ASME Section VIII, Division 1 or 2.

A coil installed in a pressure vessel is considered a part of the pressure vessel (i.e. second chamber), and shall be designed, constructed, and inspected per the same code of construction used for the pressure vessel (i.e. ASME Section VIII Division 1 or 2, as applicable), and must meet the requirements of the Pressure Equipment Safety Regulation (PESR).

A coil designed and constructed in accordance with a piping code shall not be installed in a pressure vessel designed and constructed per ASME Section VIII Division 1 or 2.

Coils installed in a pressure vessel, whether removable or permanently attached by welding, shall be constructed to a registered design by an authorized manufacturer and documented on a data report.

1. Design Registration. The design shall be registered:
    a) with the pressure vessel design as a second chamber, or
    b) separately as a pressure vessel part (or fitting). In this case, the coil:
        i. shall be designed per the same code of construction (e.g., ASME Section VIII Division 1 or 2) as the pressure vessel in which the coil will be installed, and
        ii. shall be registered with its own CRN.

2. Manufacturer authorization. The coil shall be constructed in accordance with the registered design by a manufacturer that has:
    a) an Alberta Certificate of Authorization Permit to construct pressure vessels,
    b) a quality management system to construct pressure vessels issued by another Canadian Jurisdiction, or
    c) the appropriate ASME Certificate of Authorization to construct pressure vessels or pressure vessel parts (e.g., ASME Certification Mark with the “U” or “U2” Designator).

3. Documentation. The construction shall be documented on:
    a) the appropriate pressure vessel data report (e.g., U-1, AB-25, etc.) as a second chamber, or
    b) as a pressure vessel part on the appropriate manufacturer’s partial data report (e.g. U-2, U-2A, AB-25 Partial, etc.) which may, or may not, have a separate design registration.

<u>Documentation Examples</u>

Manufacturer “A”; holds a CRN for the vessel, which includes the coil
Manufacturer “B”; holds a CRN for the coil only
Manufacturer “C”; holds no CRN for the vessel or coil

Example #1:

Manufacturer “A” fabricates the vessel and the coil in accordance with 1(a). The manufacturer’s data report is required in accordance with 3(a).

Example #2:

Manufacturer “A” holds the CRN in accordance with 1(a). Manufacturer “A” fabricates the vessel, but elects to subcontract the fabrication of the coil to Manufacturer “C”. In this case Manufacturer “C” documents the coil fabrication in accordance with 3(b) and shall provide the partial manufacturer’s data report to Manufacturer “A”. Manufacturer “A” completes a final manufacturer’s data report (with the partial manufacturer’s data report attached) in accordance with 3(a).

Example #3:

Manufacturer “B” holds a CRN for the coil only.
Manufacturer “A” holds the CRN in accordance with 1(a). In this case the coil CRN held by Manufacturer “B” must be referenced on Manufacturer “A’s” CRN drawing.
Manufacturer “A” fabricates the vessel and purchases the coil from Manufacturer “B”. In this case Manufacturer “B” documents the coil fabrication in accordance with 3(b) and shall provide the partial manufacturer’s data report to Manufacturer “A”. Manufacturer “A” completes a final manufacturer’s data report (with the partial manufacturer’s data report attached) in accordance with 3(a).

A removable coil, or a coil permanently attached by welding, may be registered as a Category H fitting (i.e. a 0Hxxxx.2 CRN). However, this CRN must be shown on the vessel drawing for registration and must have a partial manufacturer’s data report (if fabricated by a manufacturer other than the pressure vessel manufacturer) signed by an Authorized Inspector.

<original signed by>

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