

Information Bulletin No. IB15-008

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Use of ASME B31.3-2014 in Alberta PWHT of P1 Materials

This information bulletin is issued to bring awareness and provide guidance to designers, owners and fabricators regarding the use of ASME B31.3-2014 Process Piping which was published 27 February 2015.

Specifically, there is a significant change in B31.3 that provides an exemption from post weld heat treatment (PWHT) of P No. 1 (all groups) materials for welds of any material thickness.

This change in B31.3 has raised concerns that:

- Pressure piping systems constructed of P1 material without PWHT will not perform adequately, particularly when exposed to certain process fluids.
- The stricter welding controls for preheat and multi-layer welding technique required during construction may not always be adequate or achievable, resulting in welded pressure piping systems that are more prone to service induced deterioration.

The Code is relying on knowledgeable users (owners and designers) to specify PWHT when they deem it necessary (see note 4 in Table 331.1.3). Designers and owners of pressure piping systems made of P1 materials that will be constructed to B31.3-2014 should review their piping specifications and designs to ensure PWHT is performed when required for service conditions, fabrication conditions, or other circumstances specified by the owner or designer.

Owner's inspectors need to be aware of this change in PWHT requirements, in order to ensure the piping system construction meets the intent of the engineering design with respect to PWHT.

Fabricators should review PWHT requirements with the designer and owner, and obtain their concurrence before using the PWHT exemption. If the new PWHT exemption will be used in piping construction, welding procedure that addresses the required preheat and multi-layer technique must be used.

At this time, ASME B31.3-2014 may be used in Alberta, but it is not in-force under the Pressure Equipment Safety Regulation (PESR). The Pressure Equipment sub-council (PESC) is reviewing ASME B31.3-2014 prior to recommending its adoption under the PESR.

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