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INTERPRETATION “Pipe Expanders”

1. Introduction

There have been many instances in which compressor packagers have elected to control pulsations by the judicious configuration of the inlet and outlet piping from the compressor rather than by employing pressure vessels commonly known as compressor bottles or pulsation bottles. The inlet and outlet piping spools used for pulsation control have been referred to as “pipe expanders”.

Occasionally, an ABSA Safety Codes Officer (SCO) has looked at what the packager had thought of as a pipe expander and determined that it should have been a pressure vessel requiring design registration and inspection by an SCO.

This document is to establish the dividing line between what may be deemed a “pipe expander” (expander) built as pressure piping and what must be a pressure vessel.

2. Limitations on “Pipe Expanders”

Suction and discharge bottles are to be designed, registered, manufactured, inspected and certified as pressure vessels. Pulsation dampening arrangements meeting all the provisions below may be designed and constructed as piping rather than as pressure vessels:

1. All components are either pipe or standard pipe fittings;
2. There are no internals of any type;
3. There is no more than one pipe cap or other head, including blind flanges, on the expander;
4. There are no Category D welds* on the weldment, with the exception of instrument connections, if such connections are used; and
5. The pipe size of the largest diameter component of the pipe expander is no greater than twice the nominal pipe size of the inlet connection to the expander.

Nothing in this document is intended to suggest any particular approach to managing the pulsations in the flow to or from a compressor. The only purpose is to differentiate that which must be considered as a pressure vessel and that which may be considered as pressure piping.

* For the purposes of this document, Category D welds are as defined in ASME Section VIII, Division 1, para. UW-3(d).

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