

Bob Marchak

From: Christa McNeill
Sent: Thursday, July 04, 2013 3:34 PM
To: Bob Marchak
Subject: Re: QUESTION RE PSVs for EXCHANGER - Fw: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Thanks Bob, we'll go with both, especially since we already built the spools.

I appreciate your input.

Thanks

Christa

From: Bob Marchak
Sent: Thursday, July 04, 2013 02:56 PM
To: Christa McNeill
Subject: RE: QUESTION RE PSVs for EXCHANGER - Fw: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Hey Christa, from my knowledge of the codes and from my experience, both shell and tube sides require "overpressure protection". The tubeside, unless it states "overpressure by design" on the manufacturers data report, will need a PSV.

My 2 cents.

Thanks

Bob

From: Christa McNeill
Sent: Thursday, July 04, 2013 12:33 PM
To: Bob Marchak
Subject: QUESTION RE PSVs for EXCHANGER - Fw: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Hi Bob,

After you brought to our attention during the turnaround the lack of the PSVs on the new exchanger, we decided that we would car seal the required valves for now but proceed with installing PSVs so we won't have to add to the car seal list permanently. The engineering company (see email thread below) is saying that we only need PSVs for the shell side, not the tube side (however, I already had construction build the spools for both). I wanted your opinion on this: do you feel we need PSVs for both shell and tube sides or just for the shell side?

Thanks for your continued help with this. I really wish I had thought to bring your expertise into this project earlier!

Christa

From: Meron Saffarpour [<mailto:merons@excelsioreng.com>]
Sent: Thursday, July 04, 2013 12:26 PM
To: Christa McNeill
Cc: Munshi Hossain <munshih@excelsioreng.com>
Subject: RE: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Hi Christa,

Heat input due to fire will be transferred to the shell side of the exchanger, heating up the fluid in the shell side directly through the wetted surface. If the fluid in the shell side is liquid it boils off and the generated vapor lifts the PSV and if it is gas, the expansion of the gas lifts the PSV. The heat will not be transferred to the tubes directly, it will be transferred via the warmed up fluid inside the shell through conduction/convection. When the fluid inside the shell is a gas, the heat transfer coefficient is very low and if the

fluid in the tube side is also a gas it needs a very prolonged period to expand the fluid in the tube side to lift a PSV. The PSV on the shell side lifts long time before a PSV on the tube side. Also of the heat input to the vessel, most of that will be absorbed by the fluid in the shell side (which will be relieved) and only a portion of that remains to heat up the tubes and tube side fluid. So, in most of the cases, tube side PSV is not required, especially when one side is gas, leave it alone if both sides are gas.

Having said all of the above, if the inspector requires a PSV on both sides, it is hard to convince him that this is not required or it is overkill. The same size PSV as the shell side is more than enough.

Regards,

Meron Saffarpour, P.Eng.
Senior Project Manager



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merons@excelsioreng.com

From: Christa McNeill [<mailto:Christa.McNeill@huskyenergy.com>]

Sent: July 4, 2013 9:48 AM

To: Meron Saffarpour

Cc: Munshi Hossain

Subject: Re: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Thank you, Meron.

This is new to me so please excuse the question, but why is the fire case only required for the shell side? Is it simply due to the greater volume in the shell side. I thought the tubes were only rated for 2758 kPA (at least that's what I think the pressure rating is, I don't have the drawings in front of me). From our inspector's comments during the turnaround I thought both sides required a PSV.

Thanks
Christa

From: Meron Saffarpour [<mailto:merons@excelsioreng.com>]

Sent: Thursday, July 04, 2013 09:25 AM

To: Christa McNeill

Cc: Munshi Hossain <munshih@excelsioreng.com>

Subject: RE: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Hi Christa,

Fire case PSVs are only required on the shell side of the heat exchangers. The size is for shell side and information we sent to Spartan is also for shell side.

As they mentioned in their quotation, the PSV is a stock item so I think they can deliver it as soon as they receive the PO.

How do you want it to be delivered? Since it is a small item, is a courier (DHL) delivery good for you? How you will pay for delivery? What is shipping address and who is the receiver?

Regards,

Meron Saffarpour, P.Eng.
Senior Project Manager



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merons@excelsioreng.com

From: Christa McNeill [<mailto:Christa.McNeill@huskyenergy.com>]
Sent: July 4, 2013 1:05 AM
To: Meron Saffarpour
Cc: Munshi Hossain
Subject: Re: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Meron,
I'm certain that the size below is for both PSVs (shell and tube side) but can you please confirm?

We will go with regular temperature PSVs.

I'm away from the office but will request a PO Thursday morning and will forward to you to send to Spartan. Can you please request a delivery time from them?

Thanks
Christa

From: Meron Saffarpour [<mailto:merons@excelsioreng.com>]
Sent: Wednesday, July 03, 2013 02:01 PM
To: Christa McNeill
Cc: Munshi Hossain <munshih@excelsioreng.com>
Subject: FW: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Hi Christa,

Thank you for the call. With Munshi on vacation, there was nobody to follow up with the vendor. I did the follow up and attached is their quotation. As you can see, vendor also sized the PSV exactly as we did: 1" 300 RF x 2" 150 RF with D orifice. The design temperature is -20°F-800°F, i.e. it is not low temp. If you need low temp, I can ask them about but usually low temp PSVs are factory order while this one is in stock and they can ship it as soon as they get the PO.

Please advise how you want me to proceed with this order? Do you issue PO directly to them or you want us to handle it for you?

Regards,

Meron Saffarpour, P.Eng.
Senior Project Manager



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From: Aaron Ivers [<mailto:Ivers.Aaron@spartancontrols.com>]
Sent: July 3, 2013 1:27 PM
To: Meron Saffarpour
Cc: Munshi Hossain; John G. Anderson
Subject: RE: 3244 Husky Ansell- RFQ for a PSV - Spartan Quote 1993178SQ

Hi Meron,

Please find our quote attached. Please double check the exposed surface area and determine if the back pressure is constant or variable.

Please contact me if you have any questions or concerns.

Regards,
Aaron Ivers

Aaron Ivers | Application Eng. |
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A# 626024
66197561

E-102
GAS/GAS DEHY. PRE-COOLER

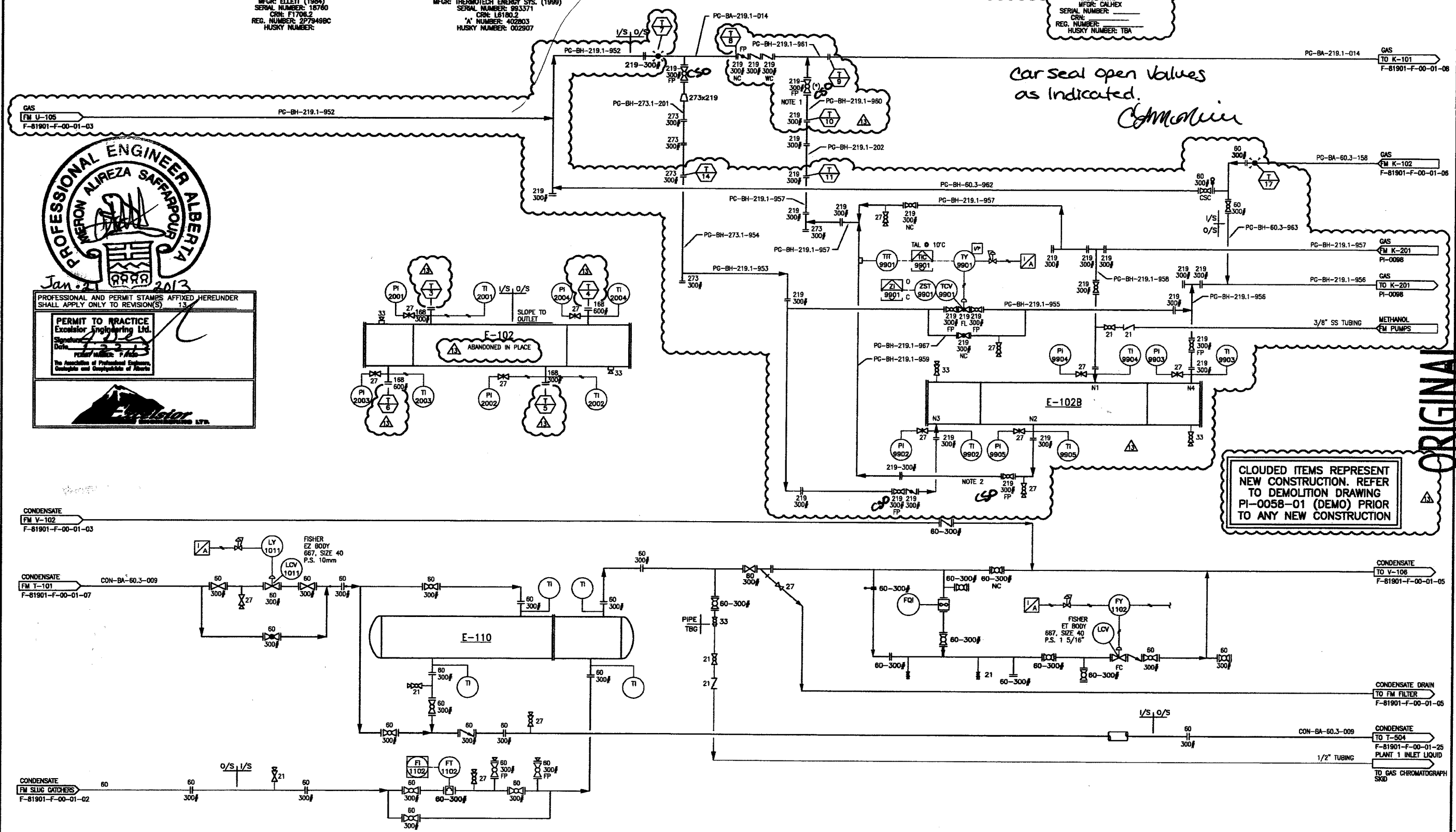
SIZE: 324mm OD x 11081mm H/H
SHELL DP/DT: 3350 KPag @ 90°C
TUBE DP/DT: 6550 KPag @ 90°C
DUTY:
MFR: ELLETT (1984)
SERIAL NUMBER: 18760
CRN: F1706.2
REG. NUMBER: 277949BC
HUSKY NUMBER:

E-110
CONDENSATE EXCHANGER

SIZE:
SHELL DP/DT: 3344 KPag @ 177/-29°C
TUBE DP/DT: 3344 KPag @ 177/-29°C
DUTY:
MFR: THERMOTEC ENERGY SYS. (1999)
SERIAL NUMBER: 993371
CRN: L6180.2
'A' NUMBER: 402203
HUSKY NUMBER: 002907

E-102B
GAS/GAS BOOSTER COMPRESSOR PRE-COOLER

SIZE: 584mm ID x 14630mm H/H
SHELL DP/DT: 2758 KPag @ 73/-45°C
TUBE DP/DT: 2758 KPag @ 70/-45°C
DUTY: 327.8 kW
INSULATION:
MFR: CALHEX
SERIAL NUMBER:
CRN:
REG. NUMBER:
HUSKY NUMBER: TBA



CLOUDED ITEMS REPRESENT
NEW CONSTRUCTION. REFER
TO DEMOLITION DRAWING
PI-0058-01 (DEMO) PRIOR
TO ANY NEW CONSTRUCTION

- NOTES**
1. ALL VALVES SHOWN WITH (*) TO BE RE-USED.
 2. AVOID DEAD LEGS AND POTENTIAL POINTS OF ACCUMULATION OF WATER TO PREVENT FREEZING DAMAGE.

REF DWG NO	REFERENCE DRAWING DESCRIPTION	NO	REVISION HISTORY	REV AUTHOR	REV DATE	ISSUED FOR	NO	CURRENT REVISION	ISSUED FOR CONSTRUCTION
		7	PREPARED FOR ENR 9803-001	MILLED	2008/05/29	CONSTRUCTION	13	IFC FOR ENR 16331 EXCELSIOR 3244	DOC DATE 2012/07/04
		8	INLET SCREW COMPRESSOR ADDITION FOR ENR 011603, GLE 08090	GLEL	2008/08/01	CONSTRUCTION			DOC AUTHOR STATED
		9	REVISED AS NOTED (ENR 011603, GLE 08090)	GLEL	2008/08/12	CONSTRUCTION			SCALE NTS
		10	REVISED DRAWING NUMBERS (ENR 011603, GLE 08090)	GLE	2008/08/27	CONSTRUCTION			ALTERNATE IDENTIFIER F-81901-F-00-01-04
		11	AS BUILT (GLE 08240)	GBR	2009/02/17	AS BUILT			SURFACE USE 07-27-051-19W5
		12	IFC FOR ENR 15010 STANTEC CS15462	STANTEC	2011/03/09	CONSTRUCTION			DOCUMENT IDENTIFIER PI-0058-01
		6	PREPARED FOR BAY PROJECT BAY A80439-002	BAV	2007/04/18	CONSTRUCTION			

Husky Oil Operations Limited

ANSELL GAS PLANT #1 07-27-051-19W5

E-102 & E-110 EXCHANGERS
PIPING & INSTRUMENTATION DIAGRAM

