PROJECT :			DATE :	3/4/2011
PROJ. NO.:			BY :	S.R
CLIENT :			REV :	A
UNIT :			DOC NO.:	0

Two Phase PSV Sizing - HEM Model Numerical Solution

Input Data		
Required Relief Rate	kg/h	92783
Total No. of Operating PSVs	----	1
Required Relief Rate	kg/h	92783
Set Pressure	barg	46
Overpressure Percent	%	10
Relief Pressure	barg	50.6
Releiving Temperature	C	62
Molar Entropy @ Releiving	kcal/kgmolC	154.6

Molar Entropy	Pressure	Temprature	Gas Density	Liquid Density	Vapor Mass Fraction	2 Phase Specific Volume	Specific Mass Flux
kcal/kgmolC	barg	C	kg/m^3	kg/m^3	----	m^3/kg	$kg/m^2/s$
154.6	50.6	62.073	40.80	733.9	0.832	0.02063	0
154.6	48.7	60.065	39.48	735.9	0.832	0.02129	4169
154.6	46.8	57.984	38.16	737.9	0.831	0.02201	5752
154.6	45.0	55.827	36.83	739.9	0.830	0.02277	6866
154.6	43.1	53.586	35.50	741.9	0.829	0.02360	7717
154.6	41.2	51.256	34.16	744.0	0.829	0.02449	8388
154.6	39.3	48.830	32.81	746.0	0.828	0.02546	8920
154.6	37.4	46.298	31.46	748.1	0.827	0.02652	9340
154.6	35.6	43.647	30.10	750.1	0.826	0.02768	9664
154.6	33.7	40.884	28.73	752.2	0.825	0.02896	9901
154.6	31.8	37.980	27.35	754.3	0.824	0.03037	10061
154.6	29.9	34.916	25.97	756.5	0.823	0.03194	10149
154.6	28.0	31.689	24.57	758.6	0.822	0.03369	10169
154.6	26.2	28.275	23.17	760.8	0.821	0.03567	10124
154.6	24.3	24.650	21.75	763.0	0.820	0.03792	10016
154.6	22.4	20.785	20.32	765.4	0.818	0.04051	9845
154.6	20.5	16.646	18.88	767.7	0.817	0.04350	9612
154.6	18.6	12.189	17.42	770.1	0.815	0.04702	9315
154.6	16.8	7.359	15.95	772.6	0.813	0.05122	8953
154.6	14.9	2.083	14.46	775.2	0.811	0.05633	8524
154.6	13.0	-3.738	12.95	777.9	0.808	0.06269	8022

Calculation Results		
Maximum Mass Flux	$kg/m^2/s$	10169
PSV Choke Pressure	bara	29.1
Gas Density at Max. Flux	kg/m^3	24.6
Liq Density at Max. Flux	kg/m^3	758.6
Discharge Effective Coe.	----	0.9
Backpressure Corr. Factor, Kb	----	1.0
Required Relief Area	**mm2**	**2816.0**
Required Relief Area	**in2**	**4.4**

Notes