					Southern Adish Gas Condensate Refinery Project						
					INSTRUMENT DATA SHEETS FOR ORIFICE PLATE AND FLANGES & RESTRICTION ORIFICES - NHT						
					Project	Phase	Unit	Disc	Type	Seq. No	Rev.
Class : 1					SACR	DE	NHT	IN	DSH	5305	00
Orifice Flow Element											
GENERAL	1	Item No.			Tag No.		Quantity			FE-502-831	1
	2	Service								Cooling Water from BL	
	3	P & ID No.								SACR-DE-NHT-PR-PID-1258, Sheet 2/2	
	4	Line No.			Piping Class		Line Schedule		CWS-16"-502-001-A1L1U-UW	A1L1U	40
	5	Line Size						Unit		16	inch
PROCESS CONDITIONS	6	Fluid			Phase					CWS	Liquid
	7	Flow	Minimum		Normal		Maximum	Unit	-	749596	815726 Kg/hr
	8	Temperature	Minimum		Normal		Maximum	Unit	-	37	- °C
	9	Pressure	Minimum		Normal		Maximum	Unit	-	7.5	- Barg
	10	Design Temperature (Min/Max)						Unit		85.0	°C
	11	Design Pressure (Min/Max)						Unit		12.5	Barg
	12	Full Scale Flow						Unit			Kg/hr
	13	Maximum Allowable Pressure Loss								0.25	bar
	14										
	15	Operating Density						Unit		993.7	Kg/m3
	16	Compressibility Factor (Z)								-	
	17	Molecular Weight			Cp/Cv				-	-	
	18	Vapor Pressure Pv						Unit		0.06	Bara
	19	Service Type (Permanent/Intermittent)								Permanent	
	20	Operating Viscosity						Unit		0.692	cP
	21	Superheat (Yes/No)			NACE Service (MR 0175)				No	No	
	22	Corrosive Service			Toxic Service				No	No	
	23										
ORIFICE PLATE & FLANGES	24	Flow Element Type								Square Edge & Concentric Orifice	
	25	Calculation Standard								ISO 5167-2	
	26	Material								A182-TP316	
	27	Plate Thickness								6.4 mm THK	
	28	Plate Outside Diameter/Pipe I.D.								308mm/202.72mm	
	29	Pipe Reynolds No. @ Operating Flow								1082933	
	30	Beta Ratio								0.719	
	31	Bore Diameter								145.78	mm
	32	Drain/Vent								Vent	
	33	Taps Type/Facing			Tap Size		No. of Tap Per Flange		Flange Tap	1/2" NPTF	2
	34	Flange Type			Flange Size/Rating				Welding Neck Flange, RF	**16"/300#**	
	35	Flange Material			Gasket/Ring Material				ASTM A105N	SPW (Graphite Filler I.R: SS316/CR: C.S)	
	36	Bolt & Nut Material							ASTM A193 GR.B7 Cadmium Plated/Bichromate-Treated/A194 GR.2H Cadmium Plated/Bichromate-Treated		
	37	Pressure Loss @ Meter Maximum Flow						Unit		117.9	mbar
	38	Jack Screw								Yes	
	39	Differential Pressure @ Full Scale Flow								250	mbar
	40	Taps Orientation								**from one side, (90 Degree)**	
PURCHASE	41	Manufacturer								*	
	42	Model								*	
	43	Requisition No.								*	
	44										

Notes:

1. " * " : To be defined by the vendor.
2. The orifice flanges shall be selected based on ASME B16.36 & ASME B16.5.
3. Jack screws, flanges, gaskets, bolt & nuts shall be supplied by the vendor.
4. 250 mbar is preferred meter range; other possible ranges could be selected based on the project specification.
5. The orifice shall be sized so that the maximum flow rate falls at approximately 90% of flow full scale and the minimum flow does not be less than 30% of flow full scale.
6. The orifice plate shall be supplied with an engraved tag giving the following information on its upstream side:
- Tag No.,
- D and d dimensions in mm,
- Flange rating,
- Material.