



NOTES:
 1) PRESSURES ARE ABSOLUTE UNLESS OTHERWISE INDICATED
 2) STANDARD VAPOR CONDITIONS: 15°C, 1.01325 BAR (23.6449 SM3/KMOL)
 3) NNF/NORMALLY NO FLOW
 4) SEE MANUFACTURER P&ID'S FOR BURNER CONTROL
 5) RATED POWER

LEGEND:
 LIQUIDS
 STREAM NO. °C BAR
 °C BAR KG/H
 KG/H STREAM NO. °C BAR
 GASES
 STREAM NO. °C BAR
 °C BAR SM3/H
 SM3/H STREAM NO. °C BAR
 °C BAR SM3/H
 °C BAR SM3/H
 STEAM
 °C BAR KG/H
 °C BAR KG/H
 TEMPERATURE °C
 TEMP./PRESSURE °C BAR

Stream No.:	1009	1029/3007	1030/2503	1031	1032/3020	1033	1034	1035	1049	1050	1055/1501	1056	1058/1503	1059/1505	
Process Stream	process steam to mx-1001	off gas fuel to FH-1001	PSA OFF GAS to FH-1001	Natural gas fuel to FH-1001	side Draw to FH-1001	Fuel mixture to FH-1001	Combustion air to FH-1001	Flue gas from FH-1001	process condensate from P-1002	process condensate to T-1001	Superheated HP Steam to unit150	Superheated MP Steam to unit150	Saturated MP Steam from unit150	process steam to E-1017	
	Vapor	Vapor	Vapor	Vapor	Liquid	Vapor	Vapor	Vapor	liquid	mixed (liquid/Vapor)	Vapor	Vapor	Vapor	Vapor	
Molweight	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	kmol/h	
CO2	44.010	59.2	70.40	142.7	18.19	1.3	0.71	202.0	23.25	662.5	10.74	1.6	0.03	1.6	0.03
CO	28.010	0.4	0.50	46.0	5.86	46.4	5.34	46.4	5.34	0.5	0.01	0.5	0.01	0.5	0.01
H2	2.016	1.2	1.48	202.2	25.76	203.4	23.41	203.4	23.41	1.6	0.03	1.6	0.03	1.6	0.03
CH4	16.043	4.1	4.83	207.1	26.39	187.3	94.78	211.2	24.31	0.1	< 0.01	0.1	< 0.01	0.1	< 0.01
N2	28.016	0.4	0.49	173.9	22.16	7.2	3.84	174.3	20.06	4055.6	74.65	4238.1	65.73	< 0.1	< 0.01
O2	32.000	<0.1	<0.01	0.5	0.07	<0.1	< 0.01	38.5	68.10	0.5	0.06	240.1	4.42	1365.6	21.16
H2O	18.015	2904.6	100.00	15.8	18.77	8.6	1.10	13.7	24.30	24.4	2.81	1087.7	20.02	98.7	1.53
C4H10	32.042	30.068						0.8	0.44						
C2H6	44.096							0.5	0.23						
C4H10	58.123														
C5H12	72.151														
Argon	39.948							3.7	0.43	49.4	0.91	52.9	0.82	< 0.1	< 0.01
Low Boilers		2.8	3.31					<0.1	< 0.01	2.1	0.24				
High Boilers		0.1	0.11					4.3	7.60	0.8	0.59				
Total Flow	kmol/h	2904.6	84.1	784.7	188.1	56.5	868.8	5432.8	6447.8	5140.0	17882.0	7882.4	7806.8	2849.1	
Total Flow	kg/h	52326	3380	16603	3166	1372	19983	154712	179233	31663	154712	138037	137037	51326	
Total Flow	Sm ³ /h	1989	18553	4448			20542	128457							
Stand.Dens.	kg/kmol	18.015	40.182	21.159	16.827	24.280	23.000	28.478	27.798	18.019	18.019/16.568	18.015	18.015	18.015	
Eff.Density	kg/m ³	0.76	1.70	0.89	0.71	888.01	0.87	1.20	1.18	997.87	997.91/0.70	0.80	0.80	0.80	
Specific Heat	kJ/kg°C	12.99	2.10	1.22	3.48	828.77	1.29	1.11	0.72	914.75	810.60/20.27	32.56	14.87	16.33	
Viscosity	cP	0.028	0.018	0.015	0.011	0.023	0.015	0.019	0.023	0.179	0.111/0.018	0.029	0.025	0.024	
Enthalpy	GJ/h	178.05	1.85	3.85	0.53	0.44	5.73	9.01	92.83	58.09	98.07	1070.13	447.56	383.41	
temp	°C	490	120	40	20	93	50	ATM	199	151	240	505	420	395	
Pressure	bar abs	44.0	1.7	1.5	6.0	10.0	1.5	1.0	51.7	46.7	107.0	44.0	46.0	47.0	
Liquid Molar Fraction					1.00			1.00							

4	GRELAM	12.01.04	ZMM	LAE	12.01.04	AFD	ZAGROS COMMENTS ZS-IF/L-032 INCLUDED
3	GRELAM	18.04.03	ZMM	LAE	18.04.03	AFD	REVISION ACC. DETAIL DESIGN
2	HERRL	27.11.01	ZMM	DRHJ	27.11.01	AFD	REVISION, ZAGROS COMMENTS INCLUDED
1	HERRL	23.10.01	ZMM	DRHJ	23.10.01	AFD	REVISION, ZAGROS COMMENTS INCLUDED
0	HERRL	13.07.01	ZMM	KRER	13.07.01	FI	FIRST ISSUE

REV. / P/S NAME DATE NAME NAME DATE STATUS KIND OF REVISION

PREPARED/CHANGED CHECKED APPROVED

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PROJECT: 4th METHANOL PROJECT

DWGR: CONTRACTOR: DWG. NO. DIG-PR-001 REV. 4

CONTRACTOR: PETROCHEMICAL INDUSTRIES DESIGN & ENGINEERING COMPANY شرکت طراحی و مهندسی صنایع پتروشیمی

ZPC PROJ. NO. 40404277 DWG. NO. 1175

SCALE: ORIGINAL SIZE: A1

NOMINATION: FIRED HEATER UNIT 100

BASIC DOCUMENT: PROCESS FLOW DIAGRAM SHEET 102

DCC DG DL-NO. 011430

JOB NAME: METHANOL PLANT IRAN LURGI JOB NO: 169666-1 LURGI DOCUMENT NO: 02037 REV. 4

EDV-IDNET-NO.: IGS7 E:\PIPE\696660\IPFD\RU d-02037.pfd 008 12.01.04 RP IGS60