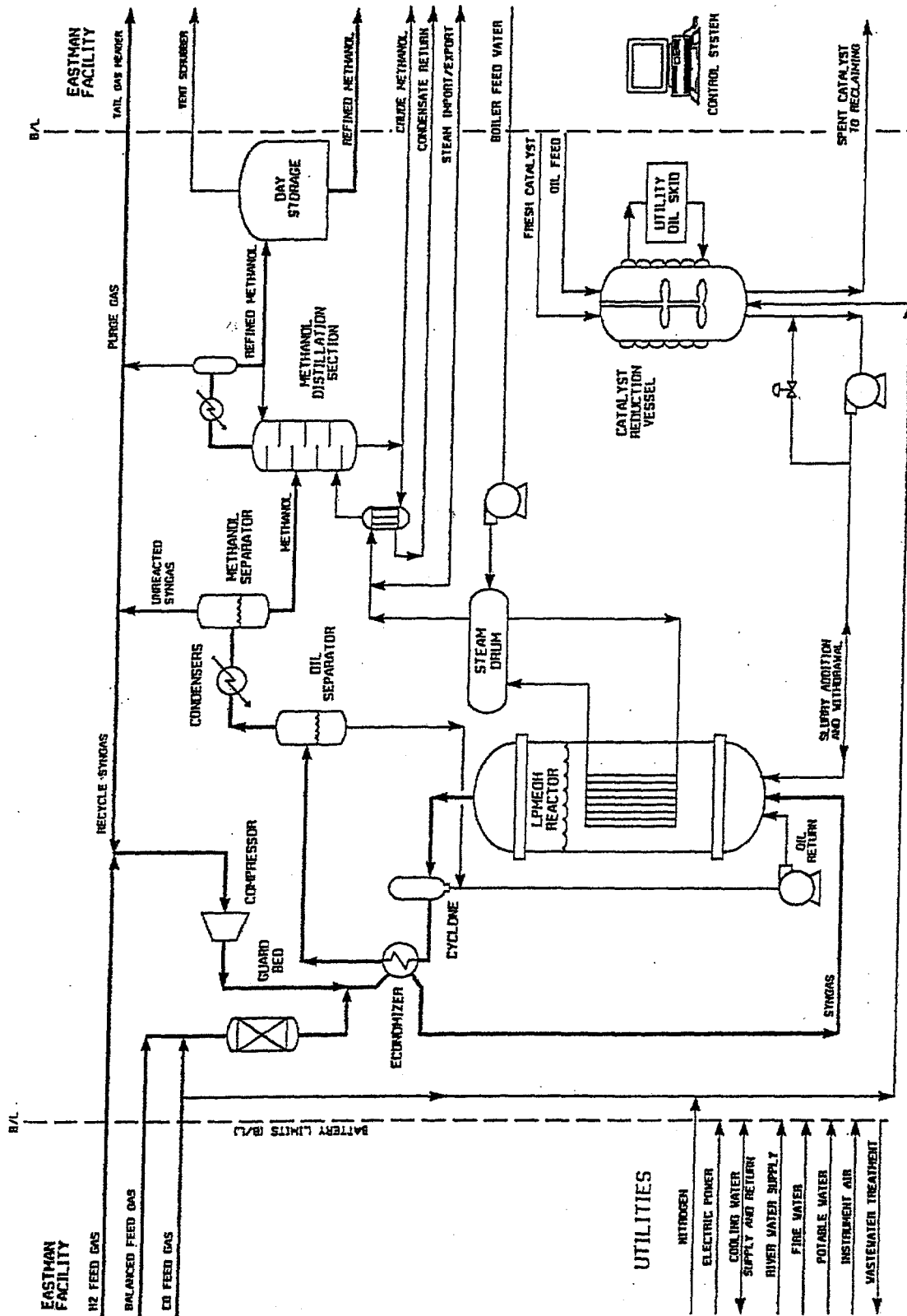


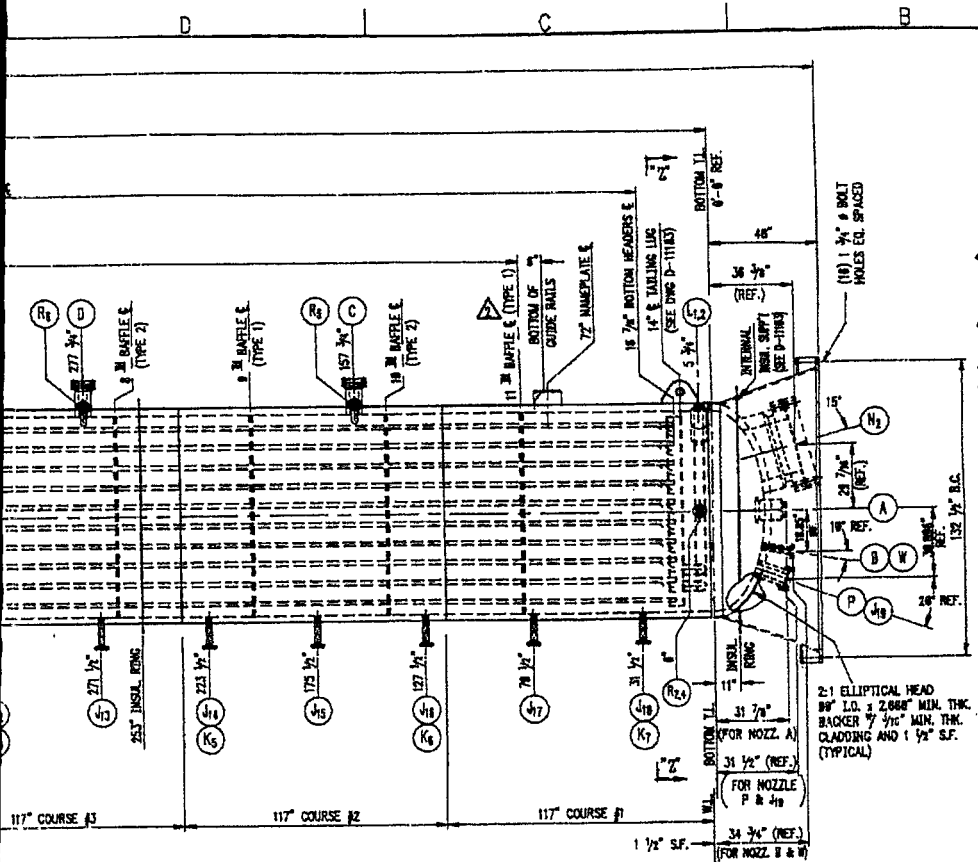
**APPENDICES**

**APPENDIX A - PROCESS FLOW DIAGRAM AND REACTOR GENERAL  
ARRANGEMENT DRAWING**



LPMEOH Demonstration Plant Process Flow Diagram





DESIGN DATA	SHELL SIDE	TUBE SIDE
APPLICABLE CODES		
ASME SECTION VIII DIV. 1 1992 EDITION 1993 ADDENDA		
DESIGN PRESSURE	FV / 1000 PSIG	FV / 840 PSIG
DESIGN TEMPERATURE	600° F	600° F
MAX ALLOW. WORKING PRESS.	FV / 1000 PSIG	FV / 840 PSIG
MIN. DESIGN METAL TEMP.	-10° F @ 1000 PSIG	-10° F @ 840 PSIG
CORROSION ALLOWANCE	NONE	NONE
RADIOGRAPHIC EXAMINATION	FULL (100%)	FULL (100%)
HEAT TREATMENT	1100° F FOR 3 HOURS (SEE GENERAL NOTES)	
FINAL TEST PRESSURE	1547 PSIG (HORZ.)	1000 PSIG

MATERIAL		
SHELL AND NOZZLE H2 PLUG	SA-516-70 7/32 CLAD	
HEADS	SA-516-70 7/32 CLAD	
NOZZLES: B - K & N - W	SA-350-LP2 7/16 OVERLAY	
NOZZLES: A, L & H	30-100 INCONEL 600	
INTERNAL PIPING / HEADERS	SA-798-S31683 & SA-240-S31603 (DUPLIX 2203) (SMLS)	
BAFFLES	304L	
TIE RODS	304L	
BRUNNIONS	SA-106-B, C/S	
TAILING LUG	SA-36	
GASKETS	FLEXITAL TYPE CGT 304 S/S W FLEXICARB FILLER	
BOLTS or STUDS	(EXT.) SA-193-B7	(INT.) 316L
NUTS	(EXT.) SA-194-2H	(INT.) 316L
SUPPORTS	SA-516-70	SA-240-304L
INSULATION (BY OTHERS)	5" THK. 80% MIN. DENSITY	

FABRICATED WEIGHT:	288,000 #
FABRICATED WEIGHT FULL OF WATER:	454,000 #
OPERATING WEIGHT:	417,000 # / EMPTY WEIGHT: 208,000 #
PAINTING:	INSIDE AND OUTSIDE OF SKIRT AS FOLLOWS: BLAST PER SSPC SP-5 (1-3 MILS PROFILE) AND APPLY (1) COAT CARBOZING 11HS (2-3 MILS D.F.T.)
INSPECTION:	OAT, AL, CUSTOMER INSPECTOR
STAMPING:	ASME "U" STAMP & NATIONAL BOARD
NOTE:	BOLT HOLES SHALL STRADDLE THE NORMAL VESSEL CENTER LINES UNLESS OTHERWISE NOTED.

NOZZLE SCHEDULE						
MARK	SIZE	SCH	RATING	TYPE	PURPOSE	REMARKS
A	6"	80	---	BWE	SYNGAS INLET	---
B	2"	---	6000 RF	LWN	SLURRY INLET/OUTLET	---
C	4"	---	6000 RF	LWN	AUX. SLURRY OUTLET	1/2 BLIND FLANGE
D	4"	---	6000 RF	LWN	AUX. SLURRY OUTLET	1/2 BLIND FLANGE
E	4"	---	6000 RF	LWN	AUX. SLURRY OUTLET	1/2 BLIND FLANGE
F	4"	---	6000 RF	LWN	AUX. SLURRY OUTLET	1/2 BLIND FLANGE
G	4"	---	6000 RF	LWN	AUX. SLURRY OUTLET	1/2 BLIND FLANGE
H	18"	80S	---	BWE	SYNGAS OUTLET	---
J1-19	1 1/2"	---	6000 RF	LWN	THERMOCOUPLE RANES	---
K1-7	1 1/2"	---	6000 RF	LWN	THERMOCOUPLE RANES	---
L1, L2	4"	80	---	BWE	8PW INLET	---
M1, M2	8"	80	---	BWE	8PW/STEAM OUTLET	---
N1	24"	---	6000 RF	LWN	MANWAY	1/2 BLIND FLANGE
N2	24"	---	6000 RF	LWN	MANWAY	1/2 BLIND FLANGE AND PLUG
P	4"	---	6000 RF	LWN	TRACER INLET	1/2 BLIND FLANGE AND PLUG
R1-R3	1 1/2"	---	6000 RF	LWN	DP TAP	---
T	18"	---	6000 RF	LWN	AUX. SYNGAS OUTLET	1/2 BLIND FLANGE
W	2"	---	6000 RF	LWN	AUX. SLURRY OUTLET	---

D-1183	SKIRT & MISC. DETAILS
D-1158	NOZZLE DETAILS, FLANGE ASSY TABLE
D-1157	SPARGER DETAILS
D-1156	INTERNAL PIPING & BAFFLE DETAILS
J.S.A. 000 000	DATE: 12/22/95
REFERENCE DRAWINGS	

LPMEOH REACTOR TAG No. 29C-01  
OUTLINE / ASSEMBLY

PCB  
**AIR PRODUCTS**  
ALLENTOWN, PENNSYLVANIA

DATE: 12/13/94	ENG/OC	RTE: 1
CHECKED BY: J8341	DATE: 12/22/94	REV
PROJ. No: 88-3-8215	DATE: 12/22/94	J8341
P.O. No: 0A-80084	DATE: 12/22/94	D-1155

NO.	DATE	DESCRIPTION	BY	APPROV.
05/18/95	2	FA AND BAFFLE TYPE NOTE TO TRIMMING ELEV. EX (25.0)	J.S.A.	J.S.A.
03/15/95	1	DL 54 (S), BS (S), DR. E, F, FA, G1, G2, H2	J.S.A.	J.S.A.
01/27/93	0	ENDDORP. CUSTOMER COMMENTS	J.S.A.	J.S.A.

REVISIONS