

SOLV/EDC & CMP PLANT NOTIFICATION OF PROCESS CHANGE CHECKLIST

Type: ☐ LEVEL 1 (minor) ☒ LEVEL 2 (moderate) ☐ LEVEL 3 (major)

Originator: Jim Haney Date of Origination: 07/31/97 Plant: Methanes

Actual Date of Change: _____ Area: Hydrochlorination Equipment: P-1250 A/B

Permanent ☒ Yes Temporary ☐ Yes From: _____ To: _____

Description and Location of Change (Scope): Replace the 1 1/2" x 1 1/2" x 1/2" ARC valves for P-1250 A/B with 2" x 2" x 1" ARC valves.

Technical Basis for Change: Existing ARC valves are designed for a minimum pump flow (recycle) of 20 gpm. Klaus-Union states that the minimum flow should be 42-45 gpm. The new ARC valves will provide the increased flow requirements.

Impact on: ☐ Safety ☒ Loss Prevention ☐ Environment ☐ Health ☐ Quality ☒ Production ☐ Other: _____

Type of Change:

☐ Alarm ☐ Process Computer Control ☒ Equip./Material Modification ☐ Process Set Point Change
☐ Shutdown Point ☐ Addition/Removal of Equip. ☐ Chemical ☐ Piping Spec.
☐ Instrument ☒ Piping Modification ☐ Job Procedure No. ☐ Other: _____

Pre-modification Checklist:

Applicable

☒ Applicable Written job scope and sketch of proposed change; POD# 1924.
☒ Applicable Project economics; attached.
☒ Applicable Consult piping and equipment specifications; Spec. #H
☒ Applicable Comply with Engineering Practices.
☐ Applicable Consult Technology Center or comply with Tech. Ctr. guidelines.
☐ Applicable Equipment access/congestion considered.
☐ Applicable Consult Environmental function
☐ Applicable Environmental project checklist complete.
☐ Applicable Chemicals listed in the (TSCA) inventory before use.
☐ Applicable Perform Reactive Chemicals testing or review.
☐ Applicable Consult Safety function for compliance with S&LP and Block requirements
☐ Applicable Consult Process Safety for impact on PHA(F&EI, CEI, & Fire protection).
☐ Applicable State Fire Marshall notified.
☐ Applicable Consult Industrial Hygiene function
☒ Applicable Consult maintenance/Reliability Eng.
☐ Applicable Consult Instrument function.
☐ Applicable Consult Electrical function.
☐ Applicable Consult Analyzer function.
☐ Applicable Consult/Inform Computer/Programming Support.
☐ Applicable Consult Area Engineer.
☒ Applicable Consult Operations.
☒ Applicable Consult Area Technologist
☒ Applicable Consult Inventory Management *see attached for new MSH code*
☐ Applicable Consult Process Engineering.
☐ Applicable Evaluate and modify relief system.
☒ Applicable Work Order written. (List them) 80471250
☒ Applicable Consult Construction/Small Projects
☐ Applicable Consult Site Logistics
☐ Applicable Consult Quality (Customer Notification ?)
☐ Applicable Other (Name them) _____

Follow-up Signature

Date

☐ Yes	<u>Jim V. Haney</u>	<u>7/31/97</u>
☐ Yes	<u>Jim V. Haney</u>	<u>8/4/97</u>
☐ Yes	<u>Jim V. Haney</u>	<u>7/31/97</u>
☐ Yes	<u>Jim V. Haney</u>	<u>2/5/97</u>
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	<u>Steve Paine</u>	<u>7/3/97</u>
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	<u>Jim V. Haney</u>	<u>8-4-97</u>
☐ Yes	<u>Jim V. Haney</u>	<u>8/4/97</u>
☐ Yes	<u>Jim V. Haney</u>	<u>2/5/97</u>
☐ Yes	_____	_____
☐ Yes	<u>Jim V. Haney</u>	<u>7/31/97</u>
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____
☐ Yes	_____	_____

APPROVALS:

Originator:

First Reviewer:

Preliminary Reviewer(Lvl 2 & 3):

Date: 8/4/97

Date: 8/4/97

Date: 8/11/97

Post-modification Checklist: (BEFORE START-UP)

Applicable		Follow-up	Signature	Date
☐ Applicable	Perform prestart-up audit: major equipment addition/mod. Lvl 3; attach.	☐ Yes		
☐ Applicable	PSM files updated(such as piping circuits).	☐ Yes		
☐ Applicable	Project list updated.	☐ Yes		
☐ Applicable	Documented in Operating Discipline Library	☐ Yes		
	Completed Job Procedures reviewed by:	☐ Yes		
	Operations _____ Safety _____ Envir. _____	☐ Yes		
	Emergency Procedures	☐ Yes		
	Training Aids (IPT, etc.)	☐ Yes		
	Controlled copies of Critical Oper. Procedures updated	☐ Yes		
	Safety/Environmental (cleaning, vessel entry, red tag)	☐ Yes		
	Update plant Roundsheets, forms	☐ Yes		
☒ Applicable	Plant equipment files updated.	☐ Yes	C. Stew	2/2/98
☒ Applicable	P&ID's, process flow sheets, and plot plans updated.	☐ Yes	C. Stew	1/7/98
☒ Applicable	Personnel trained on the change. Method: <u>Communique</u>	☐ Yes	C. Stew	2/2/98
☐ Applicable	Critical instrument checklist updated.	☐ Yes		
☐ Applicable	Updated HAZCOM Manual & equip. List.	☐ Yes		
☐ Applicable	Pressure vessels, PVRV's, & PRD registered.	☐ Yes		
☐ Applicable	Instrument loops checked and documented.	☐ Yes		
☐ Applicable	Field switches, equipment, & MCC starters checked & labeled.	☐ Yes		
☐ Applicable	Log sheets/controlled forms updated.	☐ Yes		
☐ Applicable	GPI flow diagram & history/EDAS updated.	☐ Yes		
☐ Applicable	GEMTS, PPM, & MSMS updated.	☐ Yes		
☐ Applicable	Mod V program change checklist completed.	☐ Yes		
☐ Applicable	Equipment RTO Checklist completed.	☐ Yes		
☐ Applicable	Follow-up action plan completed prior to Final Approval(attached).	☐ Yes		

APPROVAL:

Final Approver:

Date: 7/2/98

**ATLANTIC GROUP INC.***Specialty Valves*

P.O. Box 218630
Houston, TX 77218-8630
Phone: 281-578-0366
Fax : 281-578-0368

TO : DOW
FAX# : 504-353-2267
DATE : July 31, 1997

ATTENTION : Jim Haney
MESSAGE# : 9404
TOTAL# PAGES : 2

RE: Replacement of SSV10 Series Schroeder valves - ANSI 300
TAG # 1250A/B (1.5"x.5") to be replaced with SSV10 - 2" x 1"
(tagged same)

AGI Project 91118RP1

The SSV10-2" x 2" x 1"/300 Lb. RF flanged valve price is \$2,960.00 each. The minimum flow will be 42 - 45 gpm. The valve will be the identical design of existing SSV10 valve. Delivery is 12-14 weeks., F. O. B., Houston, TX.

Dimensional drawing attached.

Please call or fax my office if we can be of additional assistance.

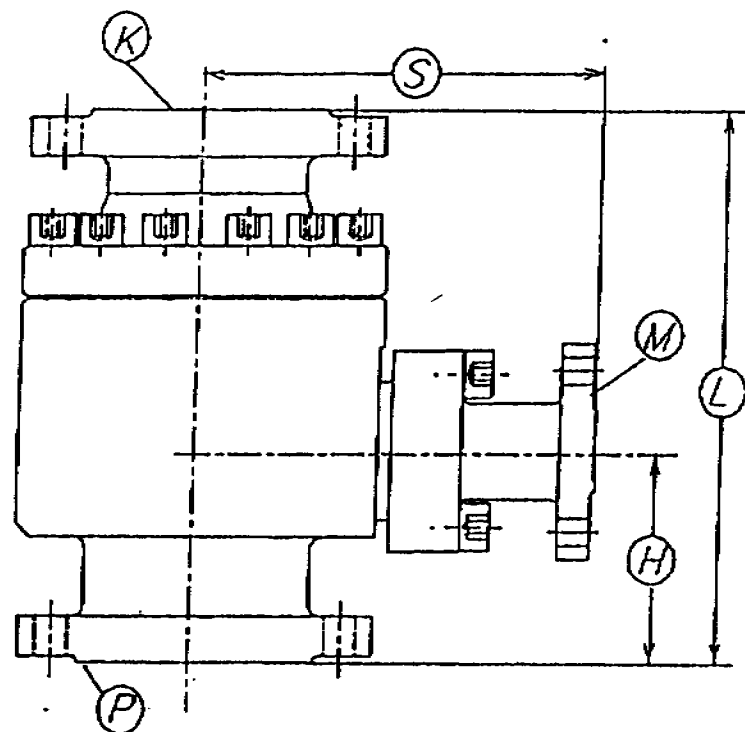
Thanks,


Bobby Engelke

BE:jw

Attachment

DOW U.S.A.



SAMPLE ONLY

Tag nr. : ARC- 1250A
ARC- 1250B

Flange rating			Installation dimensions	
	Size	ANSI Class		
P	2"	300 Lb. RF	S	7.087 inches
K	2"	300 Lb. RF	H	3.937 inches
M	1"	300 Lb. RF	L	10.630 inches
			Weight	68 lbs.

AGI ATLANTIC GROUP INC.
Automatic Pump Recirculating Valves

General layout and overall dimensions

Date
7/ /97

Size /
SSV10-2"

PROJECT DEFINITION AND SCOPE

Local Currency \$
Louisiana Model Version No. 2.1.97 Exchange Rate 1.00 \$/\$

Project Title	P-1250 A/B ARC Valve Replacement		
Project Description and Economic Bases	The existing automatic recirculation control (ARC) valves for P-1250 A/B are undersized, causing the pumps to operate at an unstable minimum flow during pump swaps and startups. This leads to failures of the mag drive pumps which cost on average \$25,000/yr. This project will provide for labor and material to install larger ARC valves.		
Net Project Cost	10	M\$	
Project Stage	2	+35% / -20%	
Benefits Estimate	28	M\$/yr	
Capital / Expense	Expense		
Project Number	Expense	XXXXX	
Completion Date	Dec-97		
Date of last update	1-Mar-96		

Run
Solver

ECONOMIC SUMMARY

Cap Exp	Project No.	Project Title	Comp. Date	Project Cost, M\$	EP (avg) M\$/yr	NPV, M\$ 10.75%	DCF%
Expense	XXXXX	P-1250 A/B ARC Valve Replacement	#####	10	16	94.223	181.62%

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P-1250 A/B ARC Valve Replacement SIMPLIFIED PROJECT ECONOMICS

COST AND CAPITAL AT CAPACITY

ITEM	COST M\$/yr	INVESTMENT M\$
Spending time, months 4.0		
Direct Fixed Capital & S/L Depr. 10 yr life	0	0
Expensed Investment		10
Factory Overhead Capital 3.40% DFC		0
General Project Costs		
Maintenance 1.50% DFC or EXP	0	
Total Other Calculated Costs	0	
Total Other Calculated Savings	(28)	
Total Utilities Cost or Savings	0	
Total Net Raw Mat'l Cost or Savings	0	
Taxes and Insurance 1.20% DFC	0	
Factory Overhead Cost 1.90% DFC	0	
REVENUE PROJECT		
Total Labor & Fixed Costs	0	
Total Transportation and Packaging	0	
Total Sales Allocations (SARD)	0	0
Net Working Capital		0
TOTAL	(28)	10

Tc

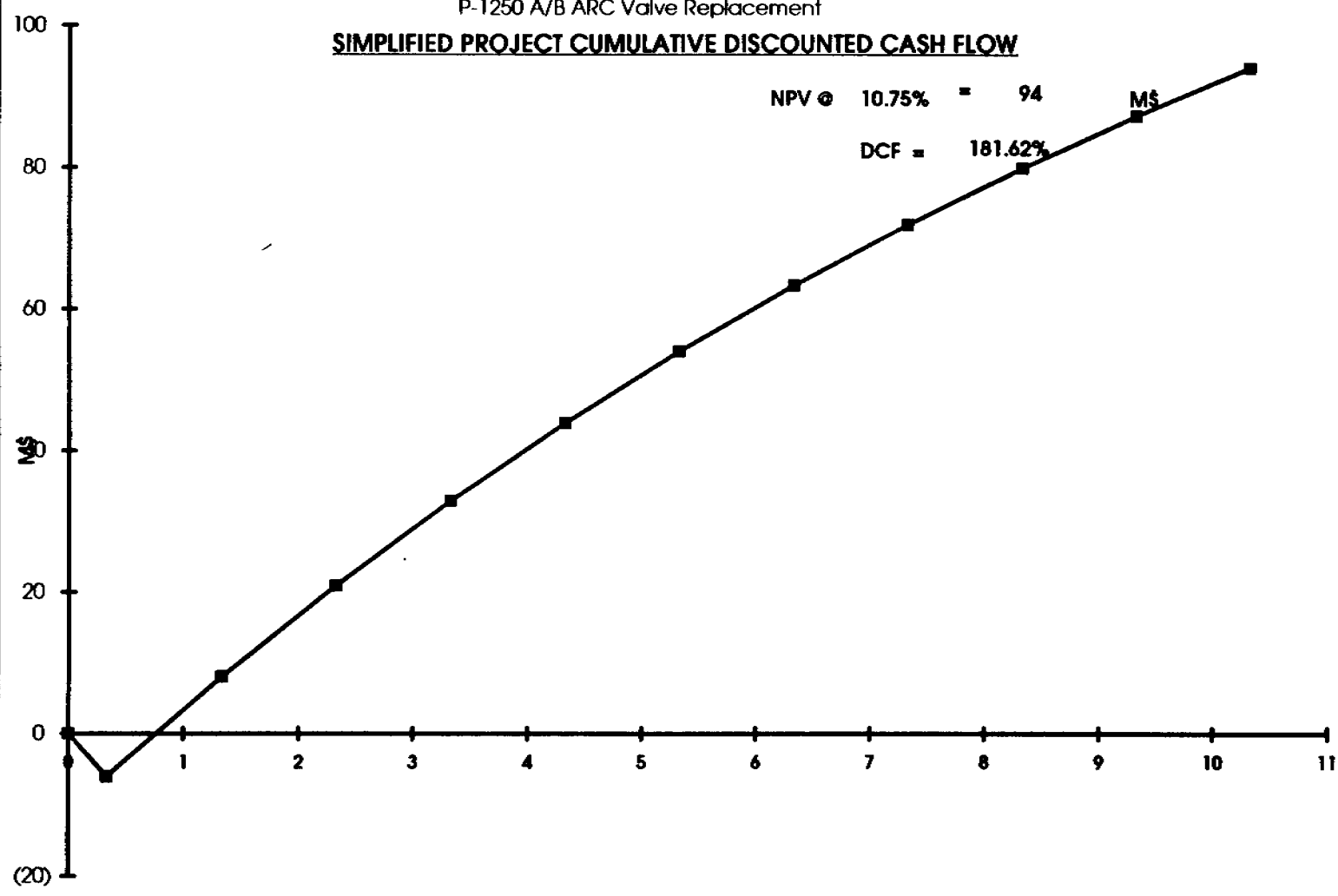
To

PV RATIO		
Project NPV \$	=	15.471
Investment NPV \$		

EP =	16	M\$
	(Annual Average)	

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P-1250 A/B ARC Valve Replacement
SIMPLIFIED PROJECT CUMULATIVE DISCOUNTED CASH FLOW



P-1250 A/B ARC Valve Replacement SIMPLIFIED CASH FLOW ANALYSIS											
Louisiana Model Version No. 2.1.97		Startup yr									
CURRENT \$, M\$	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Depreciation Schedule (Tax)	0.2	0.32	0.192	0.1152	0.1152	0.0576	0	0	0	0	0
Spending time, months	4.0										
Direct Fixed Capital	0	0	0	0	0	0	0				
Allocated Capital, O/H, RS&A	0	0	0	0	0	0	0	0			
Depreciation (non-cash cost)	0	0	0	0	0	0	0	0	0	0	0
Expensed Investment	(10)										
General Project Costs											
Maintenance	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Total Other Calculated Costs	0	0	0	0	0	0	0	0	0	0	0
Total Other Calculated Savings	0	25	26	26	27	28	28	29	30	31	32
Total Utilities Cost or Savings	0	0	0	0	0	0	0	0	0	0	0
Total Net Raw Mat'l Cost or Savings	0	0	0	0	0	0	0	0	0	0	0
Taxes and Insurance	0	0	0	0	0	0	0	0	0	0	0
Factory Overhead Cost	0	0	0	0	0	0	0	0	0	0	0
Revenue Project											
Total Revenue	0	0	0	0	0	0	0	0	0	0	0
Total Labor & Fixed Costs	0	0	0	0	0	0	0	0	0	0	0
Total Transportation and Packaging	0	0	0	0	0	0	0	0	0	0	0
Total Sales Allocations (SARD)	0	0	0	0	0	0	0	0	0	0	0
Change in Working Capital	0	0	0	0	0	0	0	0	0	0	0
PBT	(10)	25	25	26	27	27	28	29	30	31	32
Tax Rate =	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%	38%
Taxes	4	(9)	(10)	(10)	(10)	(10)	(11)	(11)	(11)	(12)	(12)
PAT	(6)	15	16	16	17	17	18	18	19	19	20
After Tax CASH FLOW	(6)	15	16	16	17	17	18	18	19	19	20
Discount Rate, WACC	10.75%	1	2	3	4	5	6	7	8	9	10
Continuous discount factor	.9823	0.915	0.822	0.738	0.663	0.595	0.534	0.480	0.431	0.387	0.348
Discounted CASH FLOW	(6)	14	13	12	11	10	9	9	8	7	7
Cumulative Discounted CF	(6)	8	21	33	44	54	63	72	80	87	94
NPV @ 10.75% = 94 M\$ Run Solver DCF = 182%											
Discounted Cash Flow Rate	181.62%	1	2	3	4	5	6	7	8	9	10
Continuous discount factor	.7502	0.252	0.041	0.007	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Discounted CASH FLOW	(5)	4	1	0	0	0	0	0	0	0	0
Cumulative Discounted CF	(5)	(1)	(0)	(0)	(0)	(0)	0	0	0	0	0

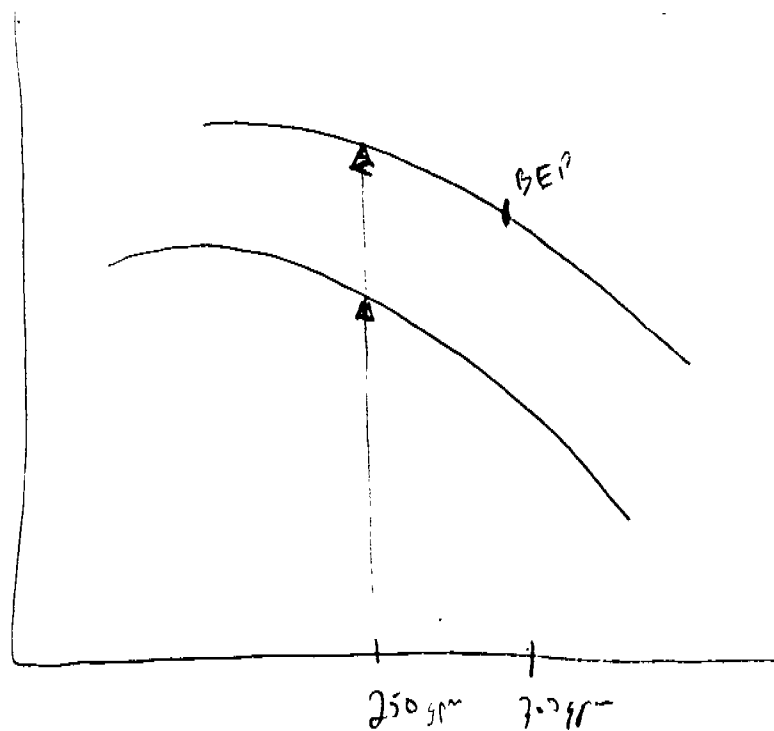
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P1250 Econ1.xls

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Econ Eval 8/4/97 1:01 PM



OPT: C15 SPARE PART LIST M7300C15

EQPT CODE: 98055731 PLANT: CMET1 TAG NUMBER: ARC-1250C

1FR NAME: SCHROEDER BROS CORP. SERIAL NUMBER: 275861

MODEL/TYPE/SIZE: SSV-10/-/2" ANSI 300 RF EQPT NAME: P-1250C ARC VALVE

ENTER DRAWING NUMBER HERE TO LIMIT ITEMS DISPLAYED: _____

SEQ	SEL	REQ	STOCK	AA	LS	DESCRIPTION	QTY
							INS
0010	-	_____	EACH	8830398		HEAD, BYPASS VALVE, COMPLETE, 2", 300#RF	1
0020	-	_____	EACH	8830399		THROTTLE	1
0030	-	_____	EACH	8830400		SPRING, COIL	1
	-	_____					
	-	_____					
	-	_____					
	-	_____					
	-	_____					
	-	_____					
	-	_____					
	-	_____					

CAT-DESC : N

***** SEL: W:REQN X:DETAIL L:LIST F:FITS-IN LIST ***** LANG CODE: 20

PF: 3:BFWD 5:ADD TO REQN 6:DTL 7:SBWD 8:SFWD 9:PRINT 12:LONG LST