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LIMIT SWITCH REPLACEMENT - PHASE III

Aberdeen Chemical Plant

November 25, 1987

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LIMIT SWITCH REPLACEMENT PHASE III

Aberdeen Chemical Plant

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LIMIT SWITCH REPLACEMENT PHASE III

Aberdeen Chemical Plant

I. Purpose and Process Description

Lack of positive valve position indication in the control room has the potential to cause safety, operational and environmental problems. The existing limit switches indicate actuator position and not the actual valve stem position. If the coupling fails or is spread, the valve could be open or partially open and still give a closed signal.

This design will provide each of the designated valves in section A of the following table with a new limit switch that indicates valve stem position. These new limit switches will provide accurate indication of valve position to the control room or the Modicon. The limit switches will be mounted on two separate brackets between the valve and the actuator. A typical drawing of a standard valve with the new limit switch is attached. Limit switches will be replaced on 80 valves.

II. Valve Location

A. Valves that would cause quality, safety or environmental problems without proper indication.

	General Location	Valve #	Valve Description	Reason
1.	Reactors 741, 742 743, 744, 745 & 700	1-6	Rinse Supply	*2-valve leak, VCM enter rinse. Rinse supply valve leak, water dilute chem wash.
		7-12	Chem Wash (CW) Supply	2-valve leak, VCM enter chem wash. Chem wash supply valve leak, CW in rinse.
		13-18	Clean Reactor	2-valve leak, VCM enter rinse or CW. 2-valve leak, rinse or CW in reactor.
		19-24	Clean Condenser	2-valve leak, VCM enter rinse or CW 2-valve leak, rinse or CW in reactor
		25-30	Steam stripping	1-valve leak, steam in reactor or VCM in steam.
		31-36	Emergency AMS Injection	1-valve leak, AMS in reactor

* Two valves would have to leak in order for this to happen. Such as rinse supply and reactor cleaning valve failure would cause VCM to enter rinse water.

2.	Reactors 300, 400 500 and 600	37-40	Chem wash to Reactor	2-valve leak, VCM in chem was or chem wash in reactor
		41-44	Chem wash to Condenser	2-valve leak, VCM in chem wash or chem wash in reactor
		45-48	Rinse to Reactor	2-valve leak, VCM in rinse or rinse in reactor
		49-52	Rinse to Condenser	2-valve leak, VCM in rinse or rinse in reactor
		53-56	Steam Stripping	1-valve leak, steam in reactor or VCM in steam
		57-60	Emergency AMS Injection	1-valve leak, AMS in reactor

	General Location	Valve No.	Valve Description	Reason
3.	Batch Water Strippers (North & South)	61-64	To Sewer, To Centrate	1-valve leak, VCM contaminated water to sewer.
		65-66	Fill Line	2-valve leak, contaminate vessel in stripping mode
		67-68	VCM Bleed	2-valve leak, contaminate vessel in stripping mode.
		69-70	Recovery	2-valve leak, contaminate vessel in stripping mode.
		71-74	To ERS	2-valve leak, contaminate vessel in stripping mode.
		75	VCM Double Block and Bleed venting to BWS's.	Three way valve-if not in correct position, contaminate vessel in stripping mode.
		76-77	Steam Pressurization	1-valve leak, contaminate vessel in stripping mode.
4.	Chem Wash Tank	78	To Reactors (New Module)	1-valve leak, safety hazzard when a reactor is blanked out.
		79	To Reactor (Old Module)	1-valve leak, safety hazzard when a reactor is blanked out.
5.	Blowdown Tank	80	To Batch Water Strippers	1-valve failure, lead to tank overpressuring and discharging to sewer.

B. Remaining valves that are indicated on the panel or that are tied into the Modicon that will not have limit switches replaced.

General Location	Valve No.	Valve Description
1. New Module		
a. Chem Wash Tank	1	Tank Outlet
	2	Tank Bypass
	3	Tank Inlet
	4	Recirculation
b. Blowdown Tank	5	Recirculation
	6	To Emission Recovery System
	7	To Recovery System
	8	To Recovery System
c. Reactors 741-745	9-13	Inert Vent
	14-18	Steam to Jacket
d. Recovery System	19	*Compressor suction manifold
	20	*Compressor suction manifold
	21	*Suction north compressor
	22	*Suction middle compressor
	23	*Suction south compressor
	24	Pressure equalization valve
	25	*Suction north vacuum pump
	26	*Suction south vacuum pump
	27	*Discharge north vacuum pump
	28	*Discharge south vacuum pump

* These valves have indication for the open position only.

e. Evacuation	29	EE-200 first stage steam
	30	Evacuation valve to EE-200

General Location	Valve No.	Valve Description
f. Colloid charge	31	PVA pump discharge
	32	PVA makeup tank outlet
	33	PVA charge tank inlet
	34	Methocel pump discharge
	35	Methocel makeup tank outlet
	36	Methocel charge tank inlet
g. Hot water charge	37	Pump suction
	38	Primary pump discharge
	39	Secondary pump discharge
	40	Hot water tank make-up
h. Rinse water	41	Rinse water supply
	42	Rinse pump bypass
	43	To top of reactors
	44	Cold water swirl
i. RVCM charge	45	Pump discharge
2. Old Module		
a. Chem Wash	1	Tank outlet
	2	Tank inlet
	3	Tank bypass
	4	Chem wash from EA-357 to FA-776
b. Batch water strippers	5-6	Steam stripping
c. Reactors	7-11	Inert vent
	12-16	Steam to jacket
d. Recovery system	7	Suction east compressor
	8	Suction west compressor
	19	To ERS
	20	From batch water strippers

General Location	Valve No.	Valve Description
e. Emission Recovery System	21	VCM Tank farm recovery
	22	Batch water stripper recovery
f. Evacuation	23	EE-100 first stage steam
	24	Evacuation valve to EE-100
g. Colloid Charge	25	Pump discharge
h. Hot water charge	26	Primary pump discharge
	27	Secondary pump discharge
	28	Pump suction
	29	Hot water tank make-up
i. Rinse water	30	Hot water rinse
	31	Rinse supply
	32	Rinse pump bypass
j. RVCM charge	33	Pump discharge

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Limit Switch Replacement - Phase III

Aberdeen Chemical Plant

III. Instrument Specification

Item	Description
PLS-101 through 180	Proximity Limit Switches

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VISTA

VISTA CHEMICAL COMPANY
GENERAL ENGINEERING
HOUSTON, TEXAS

SPECIFICATION SHEET

SPECIFICATION DATA SHEET
PROJECT NO. _____
A.F.E. NO. _____
P.O. NO. _____
MADE BY E.G.J
DATE 11-25-87 APP'D BY _____

PLANT Aberdeen Chemical PROJECT Limit Switch Replacement

ITEM NO.
SERVICE PLS 101-180 Proximity Limit Switches (2)

Quantity: 80 sets (two limit switches per set - one for OPEN, one for Close)

Service: Valve position Indication

Location: On brackets between valve and actuator (1)

Manufacturer: GO, No equal

Model: 713774

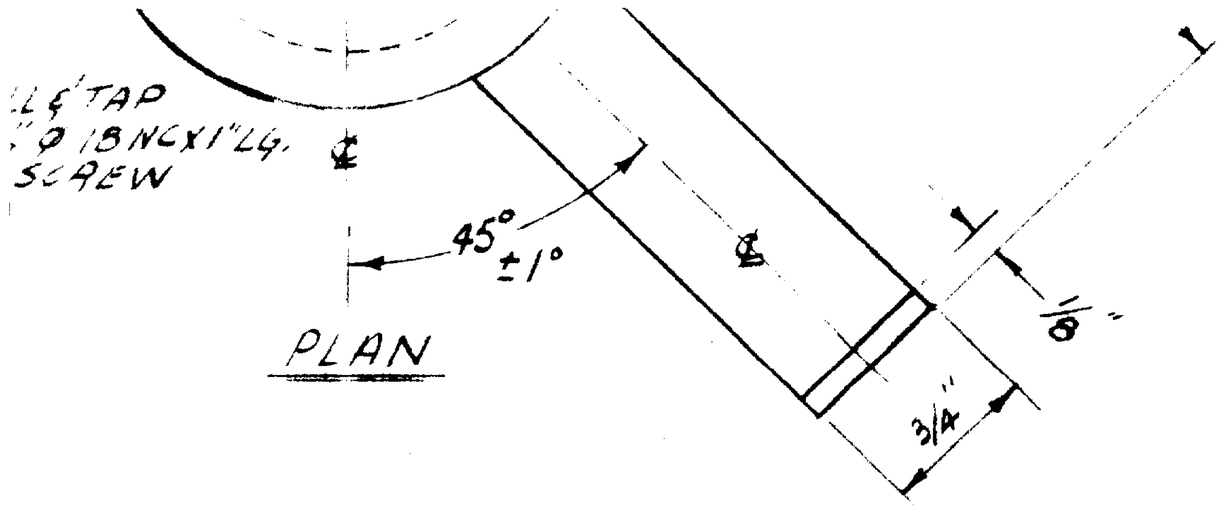
Notes:

(1) Mechanical design to be consistent with maintenance valve team recommendations.

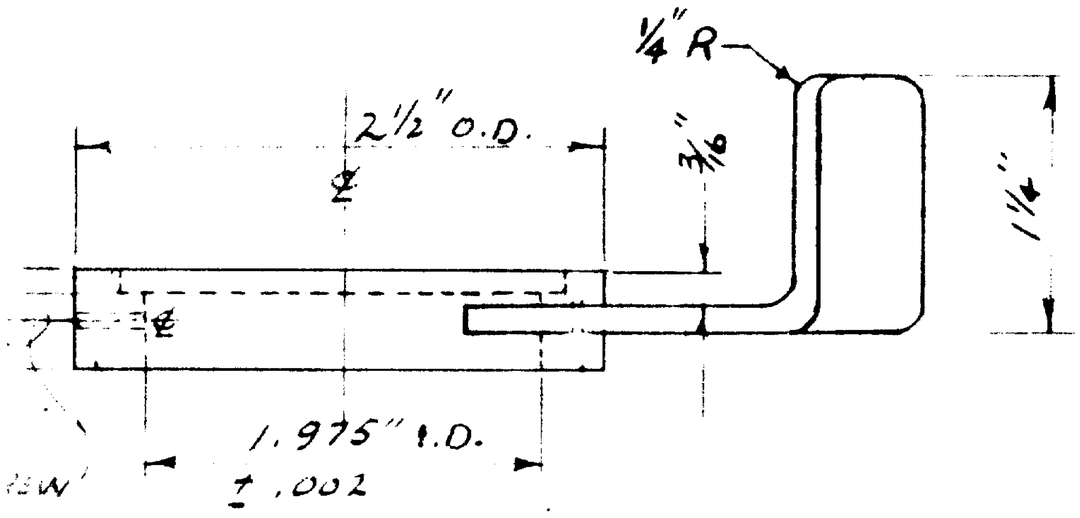
(2) See attached drawing for typical design.

SPEC NO. _____ REV. _____
SHEET _____ OF _____

VAB.0001098840



PLAN



ELEVATION

DETAIL ITEM (5)

FILLED SMOOTH.
RILLED OR MACHINED.
BE PERMANENTLY
) ON ITEMS INDICATED.

ISU	DATE	DESCRIPTION	BY	CKD	APD
1	7/15/87	ORIGINAL	RER		

VISTA Vista Polymers Inc.
Aberdeen, Mississippi

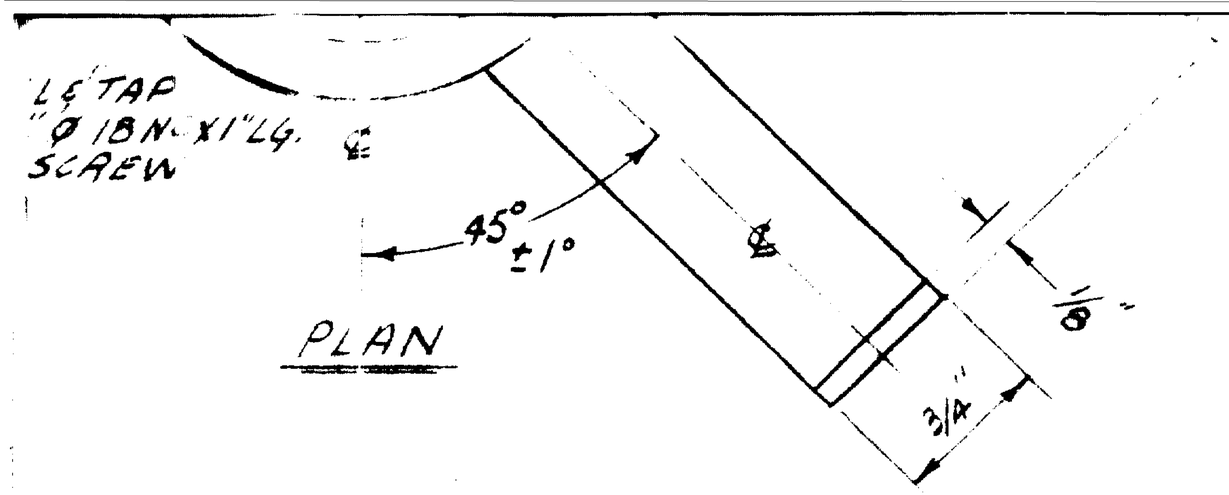
SECTION: GEN. PLANT — NEW STYLE

6"-150# TUFLINE PLUG VALVE A
FIG-067 W/ BETTIS #725 ACT.

SCALE:

APPD:
DATE:

No. GP-F039-77-2-D



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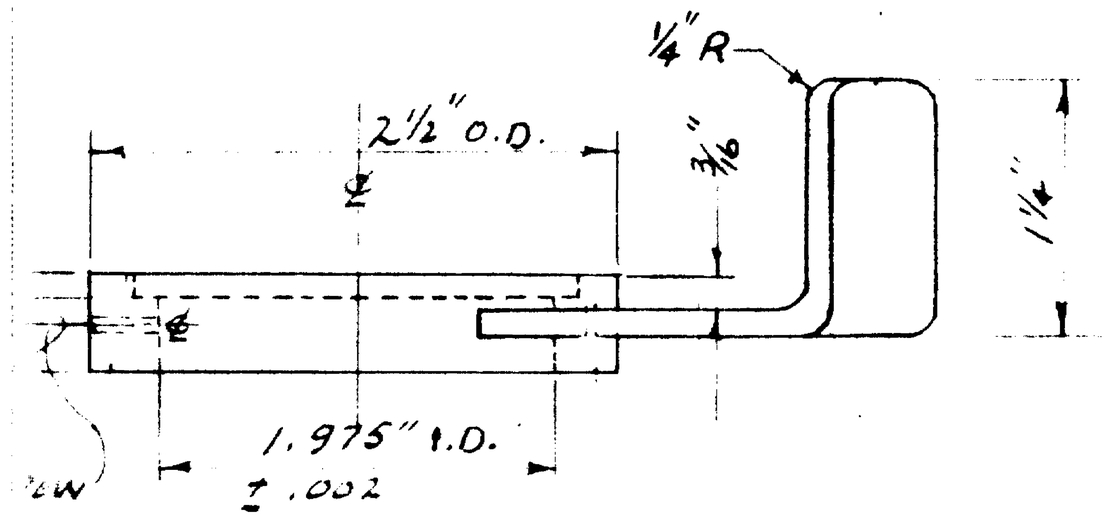

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