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Interoffice Communication

To : Distribution

From : M. L. Nathan

Date : June 25, 1982

Subject: RECOVERY SYSTEM PRESSURE MONITORING INSTRUMENTATION - PROCESS DESIGN

Attached is the process design for installation of pressure monitoring instrumentation in the new module recovery system and the old module large recovery system. This instrumentation will alert operators of high recovery system discharge pressure in order to reduce the possibility of overpressuring the system.

Instrumentation in each module will include:

(1) Installation of a pressure transmitter on the recovery system compressor discharge header.

(2) Installation of a high pressure alarm on the vinyl control panel. The alarm will sound upon high discharge pressure from the compressors.

(3) Installation of a dual pen pressure recorder on the vinyl control panel. The recorder will receive signals from the new pressure transmitter and the existing transmitter upstream of the recovery system knockout pots. The existing transmitter is downstream of the knockout pots in the old module.

By copy of this design to J. A. Dixon, a definite estimate is requested.

Michael L. Nathan

Michael L. Nathan
Process Engineer

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c: JF, CRM, PEM, MPB, JPW, RAF, VEM, AHS, JAD (2)

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RECOVERY SYSTEM PRESSURE MONITORING INSTRUMENTATION

ABERDEEN CHEMICAL PLANT

June 25, 1982

WORK BY: Michael L. Nathan
Michael L. Nathan
Process Engineer

REVIEWED BY: Veldon E. Messick
Veldon E. Messick
Senior Process Engineer

APPROVED BY: R. A. Frohreich
R. A. Frohreich
Chief Process Engineer

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RECOVERY SYSTEM PRESSURE MONITORING INSTRUMENTATION

ABERDEEN CHEMICAL PLANT

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RECOVERY SYSTEM PRESSURE MONITORING INSTRUMENTATION

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I. Purpose

The recovery systems can reach a high pressure situation due to two factors: (1) Running the compressors and vacuum pumps blocked in due to line or condenser pluggage, and (2) high inlet pressure to the system when venting a reactor. High pressure in the system can cause a potential for releasing vinyl chloride through the systems' safety relief valves.

By installation of a pressure transmitter in the compressor discharge header of the new module recovery system and the old module large recovery system, the pressure in each system can be monitored. The signal from the transmitter will be one input signal to a dual pen pressure recorder installed on the vinyl control panel for each module. The other input signal will be the system inlet pressure received from an existing transmitter.

A high pressure alarm will be installed in each module to alert the panel operator to a high pressure situation in the recovery system.

By monitoring the pressure of each recovery system and installing a high pressure alarm for each recovery system, the potential for a vinyl chloride release can be considerably decreased.

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II. Process Description

Installation of pressure monitoring instrumentation in the new module recovery system and the old module large system is similar. Following is a description of instrumentation for the new module recovery system: (Any differences in descriptions are noted).

A pressure transmitter will be installed in the compressor discharge header of the new module recovery system. The signal from the transmitter will be one input signal to a dual pen pressure recorder to be installed on the new module vinyl control panel. The other input signal to the recorder will be the recovery system inlet pressure from the existing transmitter upstream of the knockout pots. (The transmitter is located downstream of the knockout pots in the old module large recovery system).

A high pressure alarm will also be installed on the new module control panel. The alarm will sound when the pressure signal from the new transmitter reaches the alarm point, which is 100 psig.

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RECOVERY SYSTEM PRESSURE MONITORING INSTRUMENTATION

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III. Instrumentation Specifications

Tag No.	Description	Location
PAH-101	New Module Recovery System High Pressure Alarm	Vinyl Control Panel
PAH-102	Old Module Large Recovery System High Pressure Alarm	Vinyl Control Panel
PR-101	New Module Dual Pen Pressure Recorder	Vinyl Control Panel
PR-102	Old Module Dual Pen Pressure Recorder	Vinyl Control Panel
PT-101	Pressure Transmitter	New Module Recovery System Compressor Discharge Header
PT-102	Pressure Transmitter	Old Module Large Recovery System Compressor Discharge Header

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CONOCO

Continental Oil Company
Engineering Center
Ponca City, Oklahoma

Pressure Instruments

SPECIFICATION SHEET
PROJECT NO. _____
A.F.E. NO. _____
DATE 6/23/82 INQ. NO. _____
MADE BY MLN REQ. NO. _____
APP'D. BY VEM P.O. NO. _____

PLANT Aberdeen Chemical PROJECT Recovery System Pressure Monitoring Instrumentation

1	TAG NO	PR-101 (1)	PR-102 (2)	PT-101 (3)(4)	PT-102 (3)(5)
2	SERVICE	Recorder For New	Recorder For old	Pressure Transmitter -	Pressure Transmitter -
3		Mod. Recovery System	Mod. Recovery System	New Mod. Recovery	Old Module Recovery
4	INSTRUMENT, TYPE	Recorder	Recorder	Transmitter	Transmitter
5	LOCATION	Vinyl Control Panel	Vinyl Control Panel	Local	Local
6	RANGE, PSIG	0-150	0-150	0-200	0-200
7	ELEMENT	(1)	(2)	diaphragm	diaphragm
8	TYPE / MATERIAL	- / -	- / -	/	/
9	LOCATION	-	-	Compressor Discharge Header	Compressor Discharge Header
10	TEMPERATURE °F, range	-	-	-40°F to 220°F	-40°F to 220°F
11	PRESSURE PSIG, range	30" Hg - 200 psig	30" Hg - 200psig	0 - 200	0 - 200
12	VALVE TYPE				
13					
14	LOCATION				
15	MATERIAL				
16	BODY SIZE / PORT SIZE				
17	PLUG FORM				
18	Δ P / MIN. / NOR. / MAX.				
19	CALC. Cv / VALVE Cv				
20	AIR TO OPEN OR CLOSE				
21	MAX. SHUTOFF Δ P				
22	FLUID			VCM Vapor/Water/Water Vapor	VCM Vapor/Water/Water Vapor
23	TEMPERATURE °F			100-150	100-150
24	PRESSURE PSIG			30-90	30-90
25	°API (M.W.)				
26	SP. GR. AT STD. COND.				
27	SP. GR. AT P.&T.				
28	WEIGHT % VAPOR IN-OUT				
29	VISCOSITY AT P.&T.				
30	RATE, NORMAL				
31	RATE / MAX. / MIN.				
32	NOTES:				

(1) To be Foxboro Model 22052-dual pen recorder, or equal. Recorder to receive signal from PT-101 and from existing transmitter at inlet to new module recovery knockout pots.

(2) To be Foxboro Model 22052-dual pen recorder, or equal. Recorder to receive signal from PT-102 and from existing transmitter at outlet of old module large recovery system knockout pots.

(3) To be Rosemount Model 1151 GP, Gauge Pressure Transmitter with remote seals, or equal. Explosion-proof enclosure required.

(4) PT-101 to sound new high pressure alarm, PAH-101, on vinyl control panel upon high pressure in compressor discharge header. PAH-101 to be Ronan annunciator. Alarm point to be 100 psig.

(5) PT-102 to sound new high pressure alarm, PAH-102, on vinyl control panel upon high pressure in compressor discharge header. PAH-102 to be Ronan annunciator. Alarm point to be 100 psig.

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