



ESSO CHEMICAL CANADA

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B.L. LOCKHART
Manager

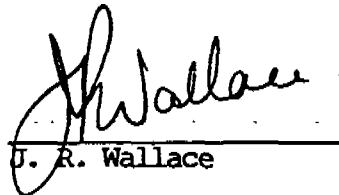
February 9, 1984

Mr. Othmer Wilinski
Electrochemical Industries (Frutarom) Ltd.
P. O. Box 1929
Haifa 31000
Israel

Dear Othmer:

Enclosed is a copy of the Appendix I from the B. F. Goodrich Safety Standard for Vinyl Chloride Storage Tanks, dated 11/15/82, as discussed in our telephone call.

Yours very truly,


J. R. Wallace

JRW/njp
0880J

Attachment

RECOMMENDED VALVES FOR STORAGE SPHERES AND BULLETS

SPECIFICATION: BALL VALVES - SPLIT BODY
150 lb. Flanged, Fire Test, Blowout Proof Stem
Grounded Ball

MANUFACTURER & MODEL NO.	PORT SIZE	AVAIL. MAT'L	AVAILABLE SIZES	ACTUATOR MOUNTING PAD PROV.
<u>KITZ</u>				
K-150-UTBM-FS	Full	SS	1/2"-10"	Yes
K-150-SCTB-FS	Full	CS	1/2"-10"	Yes
<u>KTM OMNI</u>				
E0132-32GT-15L	Full	SS	1/2"-8"	Yes
E0832-32GT-15L	Std.	SS	3"-10"	Yes
E0162-32GT-15L	Full	CS	1/2"-8"	Yes
E0862-32GT-15L	Std.	CS	3"-10"	Yes
<u>JAMESBURY</u>				
6150-31-3600	Full	SS	2"-20"	Yes
6150-31-2236	Full	CS	2"-20"	Yes
5150-31-3600	Std.	SS	6"-20"	Yes
5150-31-2236	Std.	CS	6"-20"	Yes
<u>WATTS</u>				
SF-2800-150	Full	SS	1 1/2"-6"	Yes
CF-1800-150	Full	CS	1 1/2"-6"	Yes
<u>COOPER</u>				
FIG 415	Full	Alloys Only	1/2"-12"	Yes
<u>KAMYR</u>				
PC	Full	CS	1 1/2"-24"	Yes
PC	Full	SS	1 1/2"-24"	Yes

OCC 3936

RECOMMENDED VALVES FOR STORAGE SPHERES AND BULLETS

SPECIFICATION: BALL VALVES - END ENTERING
 150# Flanged, Fire Rest, Blowout Proof
 Stem - Grounded Ball

MANUFACTURER & MODEL NO.	PORT SIZE	AVAIL. MAT'L	AVAILABLE SIZES	ACTUATOR MOUNTING PAD PROV.
<u>MARPAC</u>				
SS-C470-RF	Std.	SS	1½"-4"	Yes
CS-470-RF	Std.	CS	½"-4"	Yes
<u>WORCESTER</u>				
AF51-66	Std.	SS	½"-8"	
AF51-46	Std.	CS	½"-8"	Yes
AF-55-66	Full	SS	½"-8"	Yes
AF-55-46	Full	CS	½"-8"	Yes
<u>JAMESBURY</u>				
5150-31-3600	Std.	SS	½"-4"	Yes
5150-31-2236	Std.	CS	½"-4"	Yes
6150-31-3600	Full	SS	½"-1½"	Yes
6150-31-2236	Full	CS	½"-1½"	Yes
<u>HILLS McCANNA</u>				
McCannaflor F151	Std.	SS	½"-12"	Yes
McCannaflor F151CS	Std.	CS	½"-12"	Yes
<u>MARWIN</u>				
5233R	Std.	CS	½"-12"	Yes
5333R	Std.	SS	½"-12"	Yes
5233F	Full	CS	½"-12"	Yes
5333F	Full	SS	½"-12"	Yes
<u>WKM</u>				
310C-B136-CS-02-S1	Std.	CS	½"-4"	Yes
310C-B136-S1-02-S1	Std.	SS	½"-4"	Yes
310C-B138-CS-02-S1	Full	CS	½"-4"	Yes
310C-B138-S1-02-S1	Full	SS	½"-4"	Yes

OCC 3937

RECOMMENDED VALVES FOR STORAGE SPHERES AND BULLETS
UNDER RELIEF VALVES ONLY

SPECIFICATION: 3 WAY - 150# FALNGED VALVES
Full Port

MANUFACTURER & MODEL NO.	PORT SIZE	AVAIL. MAT'L	AVAILABLE SIZES
<u>COOPER (BALL)</u> 3 Piece T Port	Full	Alloys Only	½"-12"
<u>KAMYR (BALL) (Y)</u> Y2	Full	CS	3"-12"
Y2	Full	SS	3"-12"

BFGOODRICH CHEMICAL GROUP ENGINEERING DEPARTMENT				RELIEF VALVE INSTALLATION	ENG. STD.	
REV.	ORIG	A				ST-528
DATE	02/81	10/82				
BY	DGA	TPH				
APPD.	DGA	TPH			Sheet 1 of 6 0031S/86	

1.0 SCOPE

- 1.1 This standard covers the allowed methods of relief valve installation on vessels.
- 1.2 This standard is an adjunct to ST-1317 Relief Valve Policy.
- 1.3 Rupture Disk-Relief Valve combinations are covered in greater detail in ST-524.
- 1.4 This standard does apply to two rupture disks in series when all provisions of ST-524 have been met.

2.0 PURPOSE

- 2.1 To establish Group policy due to lack of complete clarity in the ASME code.

3.0 SOURCE

- 3.1 ASME Boiler and Pressure Vessel Code Section VIII, Paragraph UG-125 to UG-136, Addendum M.

4.0 DEFINITIONS

- 4.1 Valves are understood to mean hand operated shutoff valve either 2-port or 3-port.
- 4.2 Relief valves are understood to mean the reclosing pressure relieving device.
- 4.3 Dual relief valves are two relief valves of equal size and each capable of satisfying the vessel relief requirements.

5.0 INLET INSTALLATION

- 5.1 The distance between the relief valve and the vessel outlet nozzle shall be kept as short as possible. Direct connection is preferred.
- 5.2 Installations where dual relief valves (on one nozzle) are required for continued operation may have a 3-port valve installed between the relief valves and the vessel outlet nozzle if the following conditions are met:
 - 5.2.1 The valves and intervening piping must have an area equal to the area of the inlet flange of the relief valve.
 - 5.2.2 The valves must not be of top entering construction.

BFGOODRICH CHEMICAL GROUP ENGINEERING DEPARTMENT				RELIEF VALVE INSTALLATION	ENG. STD.	
REV.	ORIG	A				ST-528
DATE	02/81	10/82				
BY	DGA	TPH				
APPD.	DGA				Sheet 2 of 6	
						0031S/86

5.2.3 The pressure drop between the vessel and the intervening piping and valve must not be greater than 3% of the set pressure of the relief valves at full flow (See Sketch A). The relief valve must be set accordingly so that the maximum pressure in the vessel cannot exceed the maximum allowable working pressure plus accumulation.

5.2.3.1 Alternate I may be used where the ΔP is less than 3% of relief valve set pressure to either valve.

5.2.3.2 Alternate II may be used when the symmetrical arrangement cannot be used due to ΔP limitations. The pressure drop through the valve set at straight through flow must not exceed 3% of the relief valve setting.

5.3 Installations where multiple relief devices (on separate nozzles) are required--locking valves may be used between the vessel outlet nozzles and the relief devices, as follows:

5.3.1 The installation shall be according to the sketch on page 6 of this standard. The lock shall be mounted to lock the valve in the open position.

5.3.2 The valves and any spool pieces, if used, must have an area equal to the area of the inlet flange of the relief valve.

5.3.3 The valve lock shall be Type KC/QKC as manufactured by CASTELL SAFETY, INC., specified to fit the particular valve to be used.

5.3.4 Only one key shall be furnished for each vessel/installation. The key shall be unique for that installation and shall operate all locks. The key shall be captured upon opening the lock, which allows the valve to be closed. This permits only one valve to be closed at any one time--the others being locked open and the key trapped at the closed valve.

6.0 OUTLET INSTALLATION

6.1 Stop devices may be installed at the outlet of a relief valve if the valve discharges into a header with other relief valves attached and it is necessary to continue operations. The following conditions must be met:

6.1.1 Stop devices shall not have an area less than that of the relief valve outlet.

BFGOODRICH CHEMICAL GROUP ENGINEERING DEPARTMENT					RELIEF VALVE INSTALLATION	ENG. STD.
REV.	ORIG	A				ST-528
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BY	DGA	TPH				
APPD.	DGA					Sheet 3 of 6 0031S/86

6.1.2 Stop devices shall be installed per Sketch B. The order of preference shall be I, II, III, IV. Operations of the vessel that is blanked must be shut down or a responsible person must be in attendance at all times the valve is shut or condition I, II, or III exists.

6.1.3 The stop device must be lockable in open or closed position.

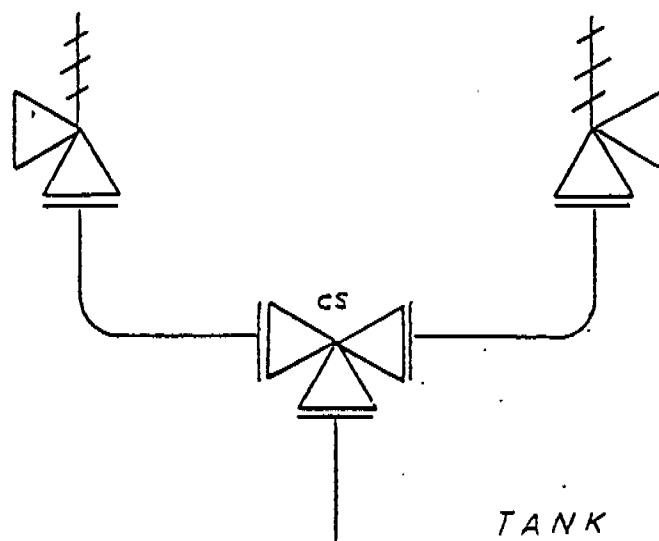
6.1.4 The pressure drop must be calculated for all probable discharge circumstances. The line ΔP should not exceed 10% of set pressure for standard relief valves or 50% of set pressure for bellows type relief valves.

7.0 INLET AND OUTLET INSTALLATION

7.1 Valves or stop devices SHALL NOT be used on both the inlet and outlet of any relief device.

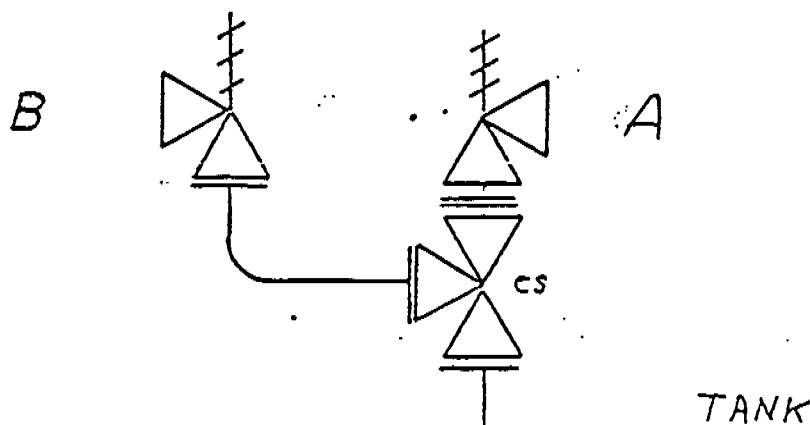
OCC 3941

INLET VALVING--RELIEF VALVES



TWO EQUAL DUTY VALVES

I



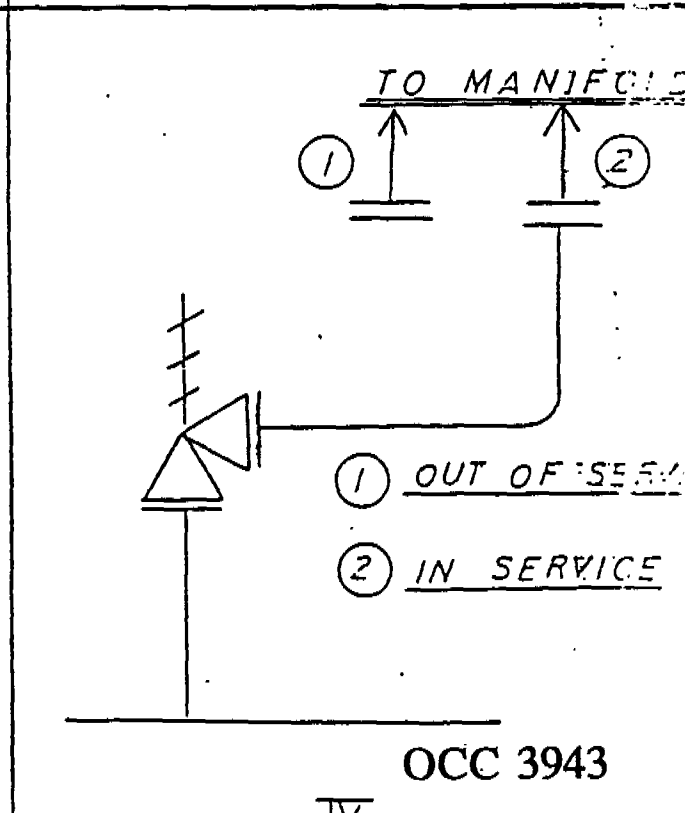
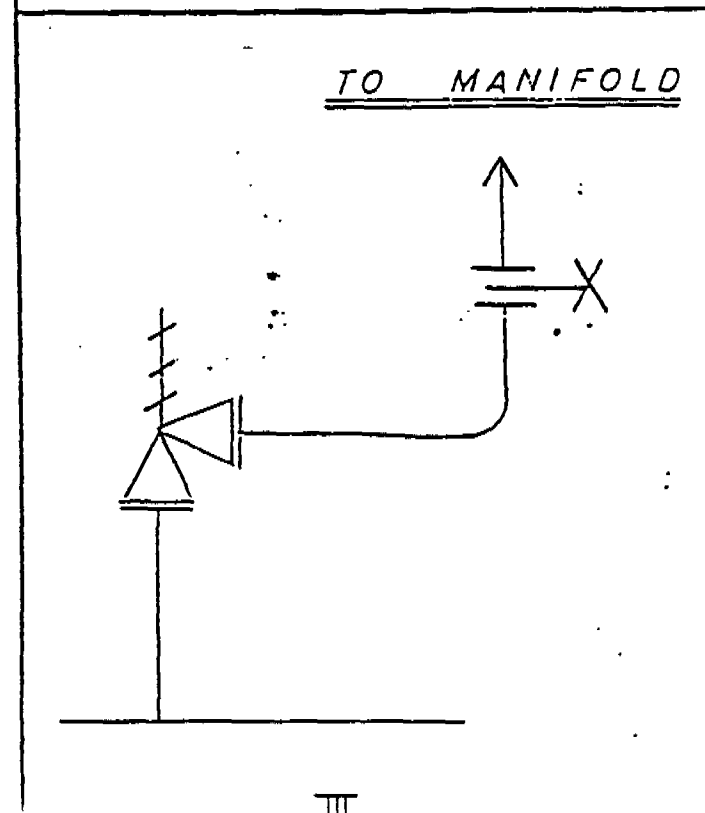
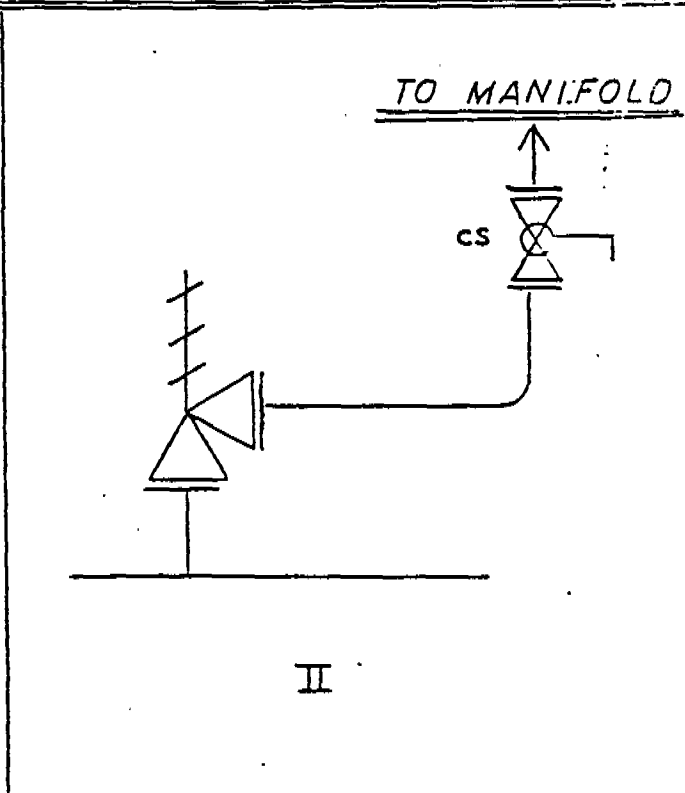
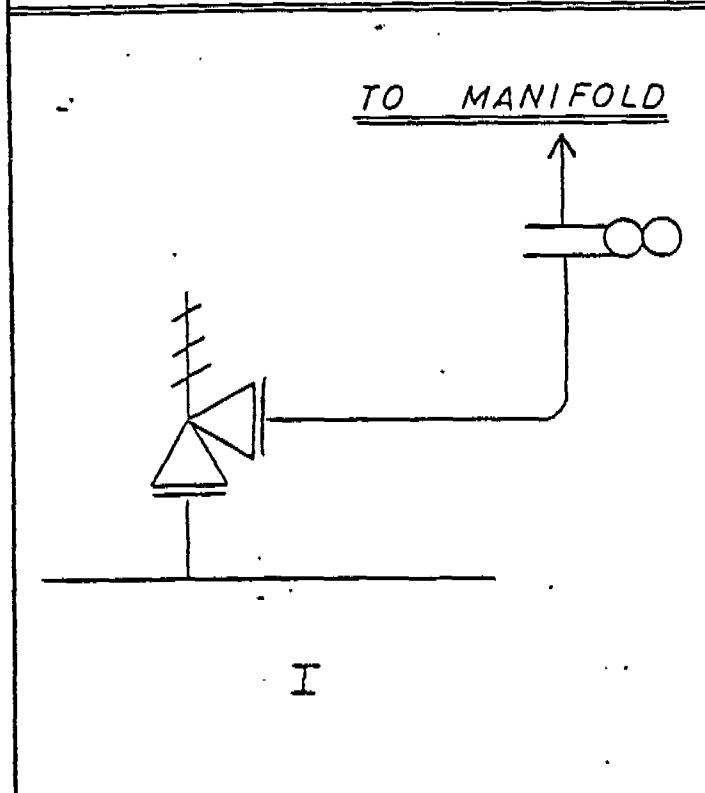
A -- MAIN DUTY VALVE

B -- EMERGENCY STANDBY VALVE

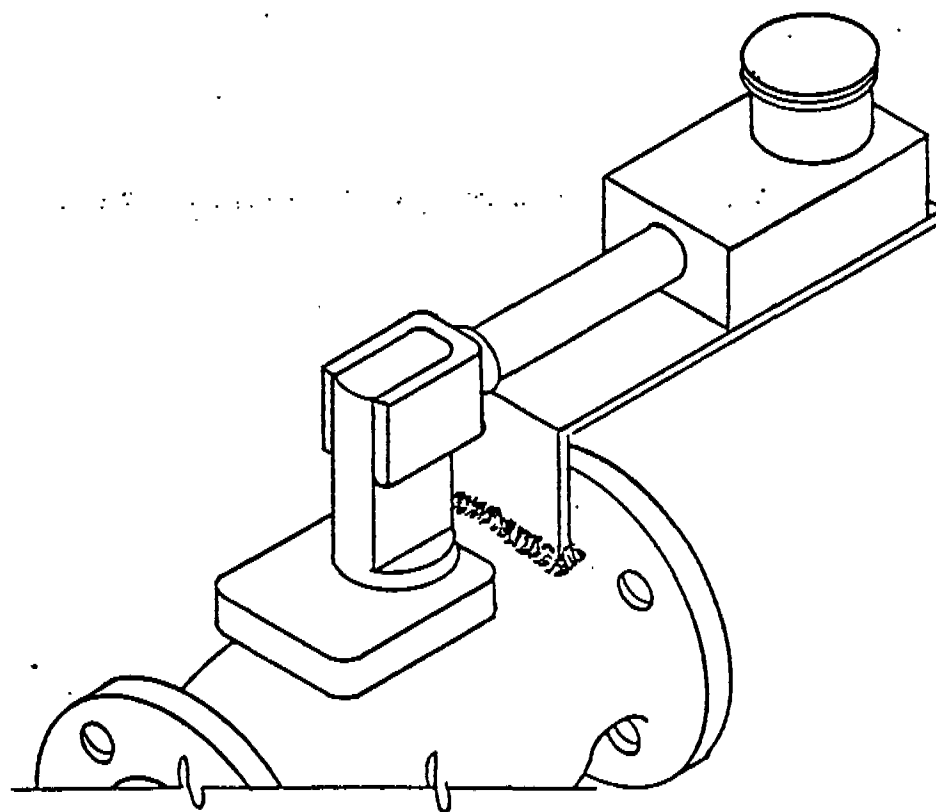
DUAL INSTALLATIONS

OCC 3942

OUTLET VALVING--RELIEF VALVING



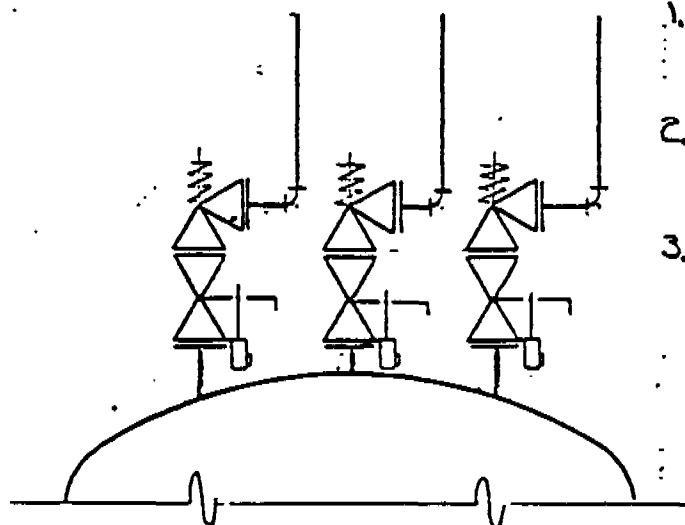
BFGOODRICH CHEMICAL GROUP ENGINEERING DEPARTMENT					VALVE LOCKING METHOD FOR RELIEF VALVES	ENG. STD.
REV.						ST-528
DATE	7/82					
BY	MH					
APPD.						Sheet 6 of 6



CASTELL LOCK MOUNTING DETAIL

NOTES

1. KEY SHALL BE CAPTURED UPON CLOSING OF VALVE
2. ONE UNIQUE KEY SHALL OPERATE ALL LOCKS ON VESSEL
3. LOCK SYSTEM SHALL BE UNIQUE TO A VESSEL



TYPICAL MULTI-NOZZLE
MULTI-VALVE ARRANGEMENT