



Interoffice Communication

To J. W. Ware

From D. A. Pruitt

Date May 10, 1980

Subject Thermal Relief Valve for Loading Rack Dryers
Design No. 152-400-380-DAP
Final Issue

The attached Class "A" design provides for the installation of a new thermal relief valve for Caustic Dryer S-401, Bauxite Dryer S-402, and the ship loading line. This new relief valve will prevent the larger existing relief valves on the dryers from lifting to relieve thermal expansion in the dryers and loading line. The new valve will relieve to the vinyl loading pump suction line, thus eliminating emergency releases to the atmosphere resulting from thermal expansion in the dryers and loading line. The VCM which would have normally been lost during a release will then be recovered. Emergency releases have occurred at least twice in the past three years, resulting in violations of the EPA vinyl chloride standard.

The review issue of this design called for two new relief valves, one for each dryer. However, since these two vessels are not normally isolated from each other and the ship loading line is not normally isolated from the dryers, a single relief valve can be used to provide thermal relief for the entire system. All block valves that possibly could be used to isolate part of the system from the relief valve will be car-locked open.

The large existing relief valves on the dryers (RV-642 and RV-643) will remain in service to provide pressure relief in case of an external fire. Piping tie-ins can be made at any time. Please contact me if there are any questions or comments concerning this design.

David A. Pruitt

David A. Pruitt
Process Engineer

Approved: _____

D. L. Davis
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Sr. Process Engineer

lad

cc: JAD-HDG-JWW(4)-CWT-JRH(4)-WVH-GLF-DLD-PLF-PE-GJF

CWH 000002056

ENERGY IMPACT STATEMENT

This project will have no effect on plant energy consumption.

ENVIRONMENTAL IMPACT STATEMENT

The possibility of emergency releases of vinyl chloride due to thermal expansion in the dryers at the loading rack and the ship loading line will be eliminated.

SAFETY AND HEALTH IMPACT STATEMENT

The likelihood of exposure to VCM in the loading rack area will be reduced since thermal expansion in the dryers and the ship loading line will no longer cause emergency releases to the atmosphere. The Process Design Safety Check List was completed for this project.

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WORK LIST

Refer to Drawing No. VCM-152-1

1. Install line 1"-HM-1-N-A2-1 from the one-inch vent valve on the caustic dryer inlet line to the inlet of new relief valve NRV-1. Install NRV-1. Car-lock the 1" valve open.
2. Install line 2"-HM-2-N-A2-1 from the NRV-1 discharge to the blind flange on the vinyl loading pump suction.
3. Car-lock the following valves open:
 - a) 10" block valve on the S-401 inlet line
 - b) 10" block valve on the S-402 inlet line
 - c) 8" block valve on the S-402 outlet line
 - d) 8" block valve on line from tank car loading line to ship loading line
 - e) 10" block valve on ship loading line
 - f) 10" block valve on loading pump suction line where line 2"-HM-2 ties in

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TIE-IN LIST

Refer to Drawing No. VCM-152-1

1. Line 1"-HM-1 to the one-inch vent valve on the caustic dryer inlet line.
2. Line 2"-HM-2 to the blind flange on the vinyl loading pump suction line.

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