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VISTA

March 12, 1987

James Wu
Air Compliance Branch
United States Environmental Protection Agency
345 Courtland Street Northeast
Atlanta, GA 30365

Dear Mr. Wu:

On December 8, 1986, this facility requested a waiver of compliance to provide time for installation of equipment necessary to comply with 40 CFR 61.242-6 of the revised vinyl chloride standard. The request was sent to the Mississippi DNR. We understand that this request was forwarded to the EPA for approval. In a telephone conversation with you more information concerning the waiver of compliance was requested. We understand the information you require to be as follows:

1. Piping and Instrument Diagrams for the project.
2. The location of the valves.
3. The size of the valves.
4. The pressure rating of the valves.
5. An explanation of activities involved with the project to gain a better understanding of the timing.

Below are the details of the requested information.

1. Four Piping and Instrument Diagrams are attached.

2. The location of the valves is attached in table I.

3. The sizes of each valve is given on the specification sheet for the valve. All valve specification sheets are attached.

4. The flange pressure rating for each valve is given on the specification sheet for the valve.

5. The replacement of reactor manometers with pressure/vacuum gauges has been completed as this only involved small piping changes. The rest of the project constitutes a major project for the plant. Installation of 26 valves integral to the process in an operating plant must be done properly

for safety, environmental and operational reasons. To help understand the timing, below is a brief description of the process involved in getting the valves installed on this project.

Definitive Process Design

This involves studying the impact of adding the additional valves in the process. This includes specifying the process conditions of the valve, the actuators, local and panel indication, how the valves operate in the process, valve indicator switches and other safety, environmental and operational concern. It also includes a review of the interlocks for the valve to prevent the valve from operating in an unsafe manner. The project is then reviewed by the engineering department and by the plant operations, safety, maintenance and mechanical engineering departments. The design is then revised and re-issued. This has been completed for this project.

Definitive Estimate

This involves understanding the process design and then going to the field and physically checking the location of equipment to be installed. Piping revisions, juction box locations, preliminary panel layouts, controller input and output racks etc. must be checked to get a good idea of the work required. Current pricing on major items will be obtained. With this information the estimate is then completed.

Obtaining Funding

Once a definitive estimate is completed, the plant will then be in a position to ask management to approve the required funding for the project. In order to receive funding, a letter is written which describes project and gives justification.

Mechanical Design and Procurement

Purchasing of equipment is done in two phases. The long lead time equipment is purchased first. However, before this equipment can be purchased, a preliminary mechanical and electrical design must be done to insure equipment ordered will be compatible with the definitive process design. Field dimensions are obtained and electrical instrumentation details are checked. The work done in the definitive estimate can be used as a starting place for this. The objective of this activity is to insure that the proper equipment is purchased. Enough design must be done to be certain that the right equipment is purchased. Mistakes in purchasing the long lead time items usually result in longer installation time and higher cost.

After long lead time items are purchased, the detailed mechanical design is started. This design includes detailed piping drawings with accurate dimensions, detailed electrical drawings, detailed

panel layouts, and detailed design of reprogramming the plants' programmable controller. When this is complete, another in-plant review of detailed mechanical design takes place. Operations, safety, and engineering review the design to make sure it meets the objective of the project. Any problems are resolved.

After this design is revised, the second phase of purchasing can begin. This phase includes the purchase of bulk items such as piping, condiut, wire, pipe fittings, juction boxes, push buttons, etc.

Basis of Bids

Once the detailed mechanical design is complete, a Basis of Bids can be prepared. This includes a detailed job description, the detailed mechanical design, welding procedures, standards for construction, safety rules to be followed during construction and legal requirements. The Basis of Bids is issued to potential contractors. After their initial review a pre-bid meeting is held to answer question and cover the details of the design. The contractors then analyze the design in a detailed manner and submit bids. This project will include a mechanical and an electrical bid package. Once bids are received, the bids are reviewed by the project engineers and a contractor is selected. A legal contract is then prepared, reviewed by plant and contractor management and executed.

Construction

Once the contract is awarded and the materials are received, work can begin on items not requiring production outages. This work involves running conduit, wires, and pre-fabrication of piping. A detailed plan is prepared for installation of equipment during the production outage. This project will most likely be installed by taking individual reactors out of service to maximize efficiency in construction. This plan is reviewed carefully by operations, safety and engineering in order to minimize the potential for safety or environmental problems that could result from the equipment installation.

The plan is then implemented using plant safety and environmental guidelines during construction. The equipment is started-up with close observation of operations and engineering. The system is checked to make certain it functions correctly. A complete check of the programmable controller interlock system is required since this project will modify the interlock logic. A safety and environmental audit of the system will be conducted. Detailed operating procedures will be prepared and operators will be trained in the specifics of the new equipment. This will include why the project is installed, how it operates and other operating details.

If you have any questions on this submittal, please call me at 601-369-3634

Sincerely,

Veldon E. Messick

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Veldon E. Messick
Chief Process Engineer

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bc: JF, WLM, JCL, File

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SUBPART V COMPLIANCE PROJECT

ABERDEEN CHEMICAL PLANT

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I. PURPOSE

This project is required for compliance with the open-ended valve clause of the revised NESHAPS standards for vinyl chloride. Open-ended valves or lines are defined as any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping. The standards that pertain to open-ended valves and lines include:

A. (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or second valve.

(2) The cap, blind flange, plug, or second valve shall seal the open-end at all times except during operations requiring process fluid flow through the open-ended valve or line.

B. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

C. When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

Exemptions are provided for open-ended valves on multiple process lines that are in actual vinyl chloride service less than ten percent of the time or operate as an open-ended valve in continual vinyl chloride less than ten percent of the time. An example of the first exemption is the sewer valve on the bottom reactor manifold. The manifold is in actual vinyl chloride service less than ten percent of the time (during reactor charge) and therefore the sewer valve does not require a double block. The second exemption is applied to the recovery evacuation headers. If one reactor is recovering and another is under evacuation, the evacuation valve on the first reactor is an open-ended valve by definition since one side of this valve is in contact with the process and the other side is exposed to the atmosphere. Since this situation occurs less than ten percent of the total time, a double block is not required. A handwritten copy of the letter to file documenting classification of these valves and other valves is included at the end of the design.

These revised standards will require installation of double block valves on the reactor atmospheric vent lines on all reactors, the catalyst charge lines on all reactors, and the chain transfer agent charge systems on 700 and 745. An additional block valve will also be installed in the inert feed line to each incinerator and in the bleed line of the double block and bleed arrangement for each incinerator.

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II. PROCESS DESCRIPTION

Please refer to the attached P & I Diagrams for each section.

REACTOR ATMOSPHERIC VENT SYSTEMS

A double block valve will be installed in the atmospheric vent stack on each reactor. The new valve will be equipped with stem mounted limit switches. Additional open/close indicator lights will be installed on the panel for the new valve. The control of the additional block valve will be with the pushbutton for the existing atmospheric vent valve. The new valve will be interlocked like the existing valve.

CATALYST CHARGE/NORMAL KILL SYSTEMS

A double block valve will be installed in the catalyst charge/normal kill line for each reactor. Additional open/close indicator lights will be installed in the field for the new valve. The control of the additional block valve will be with the open/close field switch for the existing catalyst charge valve. The panel indication of existing valve position will be revised to provide indication of the additional valve. The existing emergency close button on the panel for 741 through 744 and 300 through 600 will be used to close the additional block valve also. Emergency close switches will be installed for 700 and 745 catalyst charge systems. These new switches will operate the existing and the new valves. The new valve will be located as close as possible to the existing valve with the space between the valves electric traced and insulated for freeze protection. Freeze protection of the charge system will be accomplished by circulating water through the reactor sampling line as currently done.

CHAIN TRANSFER AGENT INJECTION SYSTEMS

A double block valve will be installed in the chain transfer additional line to 700 and 745. Open/close lights will be installed in the field for the new valve and for the existing valve. The control of the additional block valve will be with the field switch for the existing chain transfer addition valve. The panel indication of existing valve position will be revised to provide indication of the additional valve. An emergency close button will be installed on the panel to close the existing and the additional block valve. The new valve will be located as close as possible to the existing valve with the space between the valves electric traced and insulated for freeze protection.

II. PROCESS DESCRIPTION (con't)

CHAIN TRANSFER AGENT INJECTION SYSTEMS (con't)

Freeze protection for the charge system will be accomplished by circulating water through the system and to the sewer through a bleeder valve as is currently done.

INCINERATOR DOUBLE BLOCK AND BLEED SYSTEMS

An additional block valve will be installed in the inert feed line to each incinerator. An additional valve will also be installed in the bleed line on the double block and bleed arrangement to each incinerator located on top of the liquid seal flame arrestor. The double block and bleed arrangement at each incinerator will be disabled. The block valves will continue to close during low fire but the bleed valve will remain closed at all times. When the on-line incinerator is put in the high fire mode, both block valves in the bleed line will close first and then the valves in the inert feed line will open allowing flow to the incinerator. The low fire mode will first close the valves in the main line and then open the valves on the bleed line.

TABLE I

EQUIPMENT LOCATIONS

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ITEM NO.	DESCRIPTION
CV-300	D-300 Catalyst Charge System Block Valve
CV-400	D-400 Catalyst Charge System Block Valve
CV-500	D-500 Catalyst Charge System Block Valve
CV-600	D-600 Catalyst Charge System Block Valve
CV-700	D-700 Catalyst Charge System Block Valve
CV-741	D-741 Catalyst Charge System Block Valve
CV-742	D-742 Catalyst Charge System Block Valve
CV-743	D-743 Catalyst Charge System Block Valve
CV-744	D-744 Catalyst Charge System Block Valve
CV-745	D-745 Catalyst Charge System Block Valve
CV-301	300 Atmospheric Vent Block Valve
CV-401	400 Atmospheric Vent Block Valve
CV-501	500 Atmospheric Vent Block Valve
CV-601	600 Atmospheric Vent Block Valve
CV-701	700 Atmospheric Vent Block Valve
CV-741A	741 Atmospheric Vent Block Valve
CV-742A	742 Atmospheric Vent Block Valve
CV-743A	743 Atmospheric Vent Block Valve
CV-744A	744 Atmospheric Vent Block Valve
CV-745A	754 Atmospheric Vent Block Valve
CV-702	D-700 Chain Transfer Agent System Block Valve
CV-745B	D-745A Chain Transfer Agent System Block Valve
CV-101	Block Valve for Inert Feed Line to East Incinerator
CV-201	Block Valve for Inert Feed Line to West Incinerator
CV-102	Block Valve for Bleed on Inert Feed Line to East Incinerator
CV-202	Block Valve for Bleed Inert Feed Line to West Incinerator
IL-300	Dual Panel Indication of Catalyst Charge System Block Valves for D-300
IL-400	Dual Panel Indication of Catalyst Charge System Block Valves for D-400
IL-500	Dual Panel Indication of Catalyst Charge System Block Valves for D-500
IL-600	Dual Panel Indication of Catalyst Charge System Block Valves for D-600
IL-700	Dual Panel Indication of Catalyst Charge System Block Valves for D-700
IL-741	Dual Panel Indication of Catalyst Charge System Block Valves for D-741
IL-742	Dual Panel Indication of Catalyst Charge System Block Valves for D-742
IL-743	Dual Panel Indication of Catalyst Charge System Block Valves for D-743

TABLE I (con't)

IL-744	Dual Panel Indication of Catalyst Charge System Block Valves for D-744
IL-745	Dual Panel Indication of Catalyst Charge System Block Valves for D-745
IL-702	Dual Panel Indication of Chain Transfer Agent Block Valves for 700.
IL-745B	Dual Panel Indication of Chain Transfer Agent Block Valves for 745.
PLS-301	Proximity Limit Switches for New Atmospheric Vent Valve on 300
PLS-401	Proximity Limit Switches for New Atmospheric Vent Valve on 400
PLS-501	Proximity Limit Switches for New Atmospheric Vent Valve on 500
PLS-601	Proximity Limit Switches for New Atmospheric Vent Valve on 600
PLS-701	Proximity Limit Switches for New Atmospheric Vent Valve on 700
PLS-741A	Proximity Limit Switches for New Atmospheric Vent Valve on 741
PLS-742A	Proximity Limit Switches for New Atmospheric Vent Valve on 742
PLS-743A	Proximity Limit Switches for New Atmospheric Vent Valve on 743
PLS-744A	Proximity Limit Switches for New Atmospheric Vent Valve on 744
PLS-745A	Proximity Limit Switches for New Atmospheric Vent Valve on 745
PS-100	Pressure Switch for RVCM Receiver Valve Actuation
SW-301	Panel Indication for New Atmospheric Vent Valve for D-300
SW-401	Panel Indication for New Atmospheric Vent Valve for D-400
SW-501	Panel Indication for New Atmospheric Vent Valve for D-500
SW-601	Panel Indication for New Atmospheric Vent Valve for D-600
SW-701	Panel Indication for New Atmospheric Vent Valve for D-700
SW-741A	Panel Indication for New Atmospheric Vent Valve for D-741
SW-742A	Panel Indication for New Atmospheric Vent Valve for D-742
SW-743A	Panel Indication for New Atmospheric Vent Valve for D-743
SW-744A	Panel Indication for New Atmospheric Vent Valve for D-744
SW-745A	Panel Indication for New Atmospheric Vent Valve for D-745

TABLE I (con't)

SW-700	Emergency Close/Reset Switch for Catalyst Charge System Valves for D-700
SW-745	Emergency Close/Reset Switch for Catalyst Charge System Valves for D-745
SW-701	Emergency Close/Reset Switch for Chain Transfer Agent System Valves For 700
SW-745A	Emergency Close/Reset Switch for Chain Transfer Agent System Valves For 745