P-3145 ACT (proposed)

Friday, November 1, 1991
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PROJECT DESCRIPTION :

This ACT requests funds to implement P-3145 ("Meet EDC IPEL Regulations - Phase II). Appropriate engineering controls need to be installed to achieve personnel exposure compliance with OSHA Rule 1910.1000. This regulation mandates personnel exposure limits for 1,2 Dichloroethane (EDC) and other chemicals produced in Derivatives. Compliance with this regulation is essential to support the Chlor-Alkali business strategy of maintaining the movement of chlorine into the polyvinyl chloride market. The production of EDC is a key element of this strategy.

The OSHA Rule mandates lower personnel exposure limits for EDC and other chemicals produced in Derivatives. The new exposure limits for EDC are 1 ppm Time Weighted Average (TWA) exposure and 2 ppm Short-Term Exposure Limit (STEL). The previous PPG internal limits for EDC were 5 ppm TWA and 50 ppm STEL. The OSHA rule requires that engineering controls be installed by December 31, 1992.

P-3145 work includes: 1> installation of bleeds, valves, and piping to allow closed clearing of process equipment, 2> systems to eliminate exposures due to process sumps and lift stations, and 3> systems to allow closed handling and removal of wastes produced in the clearing of process equipment. This project addresses personnel exposures from clearing equipment that were not addressed in P-3097.

Annual maintenance costs associated with these new assets are estimated to be $???,???.

PURPOSE OF ACT:

This ACT requests funds to install facilities in Derivatives to comply with the new Occupational Safety and Health Administration (OSHA) Rule 1910.1000. This rule regulates new personnel exposure limits to EDC and other chemicals. This regulation requires that engineering controls be installed by December 31, 1992.

Due to the limited time and the large scope of work, this project was divided into two phases. This ACT for P-3145 is limited to those items in Phase II of the project plan. P-3097 or Phase I included: installation of double-mechanical seals on pumps, systems to clear pumps for maintenance, closed-loop process sampling, new relief devices for low pressure tanks, and systems to clear small pressure vessels. Phase II of the project includes pumps, valves, and piping as well as new equipment to allow the closed clearing of process equipment. Other vinyl chloride producers (Dow, Vista, and BF Goodrich) have already taken or are planning to take the steps listed above. Both Phase I and Phase II of the project are required to be implemented by December 31, 1992.

This project is included in the 1991 Five-year Capital Forecast for Lake Charles for $?,???,???.

PROJECT DISCUSSION:

This project was initiated to comply with the new OSHA Rule 1910.1000. The rule mandates lower personnel exposure limits for 1,2-Dichloroethane (EDC) and other chemicals produced in Derivatives. The bulk of the funds requested in this ACT are dedicated for compliance with the EDC portion of this regulation. The remainder will meet the requirements for personnel exposure to vinylidene chloride, ethyl chloride, perchloroethylene, and trichloroethylene. The new exposure limits for EDC are 1 ppm Time Weighted Average (TWA) 8-hour exposure and 2 ppm Short-Term Exposure Limit (STEL) 15-minute exposure. The previous PPG internal limits for EDC were 5 ppm TWA and 50 ppm STEL. Derivatives is currently operating under a temporary provision in the OSHA rule that allows workers in areas that exceed the new standards if they wear respiratory protective equipment. The rule requires that engineering controls be installed to achieve compliance with the new personnel exposure standards without the need for respiratory protective equipment by December 31, 1992.

Phase II addresses clearing of equipment not included in Phase I. Some examples of equipment included in Phase II are: distillation columns, reboilers, exchangers, reactors, pipe lines, storage tanks, vacuum trucks, process sumps, etc. An ACT for Phase I has been approved.

FACILITIES REQUIRED:

1. CLEARING PROCESS EQUIPMENT: This project requires the modification of all units within Derivatives to allow clearing of equipment to avoid exposure to personnel. Several clearing methods were investigated in this project and several field trials were conducted. The primary clearing methods recommended by the project are: purging with hot nitrogen, water washing, pulling a vacuum, and steaming. It is difficult in most cases to determine that only one

method will be adequate for a specific piece of equipment. Where this couldn't be done the facilities will be made available to use either method. This involves the installation of valves and piping to allow vessels to be cleared by a closed system.

New equipment is also required. The project will install several heat exchangers throughout Derivatives. Some of these exchangers will be used for heating the nitrogen used to purge organics from a piece of equipment. This greatly improves the efficiency of such purging. Other exchangers will be used to condense the steam and organics created when a vessel is steamed. Several portable vacuum units will be purchased. These vacuum pumps can be shared by the units in Derivatives. Also a portable air blower will be available for any unit in Derivatives to assist in drying large vessels after they have been steamed.

2. PROCESS SUMPS AND LIFT STATIONS: The project will install covers for all process sumps and lift stations throughout Derivatives. The emissions from these sumps will be piped to a small carbon bed for removal of organic contaminants. The carbon beds are disposable.

3. AREA MONITORING: Within each unit, an area monitoring system will be installed. The system will monitor the presence of EDC or other chemicals present in the operating unit. This will alert personnel to over-exposure situations and allow better control of clearing and other operations, to reduce the chance for over-exposures.

Portable hand-held type analyzers will be used to monitor the progress of vessel clearing and/or to locate specific points at which organics are being emitted. The project will purchase these portable analyzers for each unit.