

ETHYL CORPORATION

cc: Mr. C. A. Causey
Mr. L. R. Parker

INTER-OFFICE

PLAINTIFF'S EXHIBIT

ETCO-781

To Mr. H. O. Bourque

ADDRESS

FROM R. E. Conrad

ADDRESS

SUBJECT Tank Car Repair and Painting Facilities

DATE January 29, 1973

As you know, the facilities have been considered inadequate to do the best job for some period of time. The proximity of the PVC Plant and its bad dust condition has aggravated an already poor situation. One recent problem has been the greatly expanded solvent car cleaning activity. As if there were not enough problems, the consideration of possible OSHA requirements is necessary.

The following information will only attempt to hit the high spots. Each point made has much detail associated with it and may be later discussed in as great a detail as is felt necessary.

1. There is not enough space to most economically perform tank car repair, painting and cleaning (cleaning of non-fluid cars).
2. The lighting is grossly inadequate.
3. The drying facilities for solvent cars are very poor.

Various possibilities for correcting the problems are available.

The most recent attempt to provide more space by separating the repair and painting operations was several years ago and was estimated at above \$300,000. Historically every effort to consider painting off the plant has revealed that we have been able, under the conditions existing at the time, to do the painting on the plant much more economically. Deliberations have never got to the stage necessary to consider the labor relations aspect of doing painting elsewhere.

No serious attempt has been made to upgrade either the lighting or the drying facilities. We "get along" with them and have not been able to justify the expenditure necessary to correct the problems.

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About three years ago an insurance inspector raised the question about whether facilities should meet the National Electric Code requirements for a painting area. There was and is no question whatsoever about the fact that the area does not meet the NEC requirements for a paint shop. There was and is a real question about whether the area must be considered a paint shop. At that time the enforcing authority for the NEC was the Ethyl Corporation. Our engineering group was contacted since they are the group which initially sets area electrical classification. Their recommendation was that the area indeed be classified as paint shop. This recommendation was questioned and a request made for a meeting in the actual area to discuss the classification. This was done and the recommendation was not changed. If it had been decided to strictly adhere to Class 1, Division II rules, there would have been several major problems to overcome:

1. Lighting and receptacles would not comply.
2. Heaters used for winter decal application could not be used.
3. Burning and welding could not be done at the time any painting was in progress.

There were several reasons why immediate steps were not taken to comply with Class I, Division II requirements.

1. As previously stated, the Company was the enforcing authority for compliance with the NEC.
2. There still exists a difference of opinion on the genuine necessity for the Class I, Division II classification.
3. Compliance would have cost considerable amounts of money.

The entrance of OSHA into the picture further compounds the problem in that the NEC becomes an OSHA regulation and the enforcing authority for compliance becomes the U.S. government rather than Ethyl Corporation.

Before proceeding it should be pointed out that to the best of anyone's knowledge there has only been one serious incident due to the repair and paint function being in the same building. In 1969 there was a fire due to welding sparks falling into a paint solvents' drum and two major injuries occurred. The cause of this accident was improper storage of solvent and this has been and still is corrected. The accident had nothing to do with the fact that painting per se was being done in an area where welding was in progress. There is considerable sentiment that from a practical standpoint, with the open building, there is no significant hazard with our present method of operation.

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However, if it is decided that with dual occupancy the area must be classified as Class I, Division II and this classification complied with there seems to be two possible courses of action:

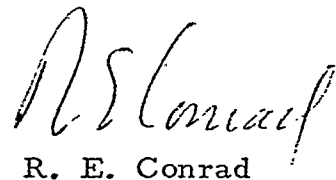
1. Spend the money necessary to make the area meet the requirements. This would be in excess of \$100,000 and would further compound the problem of inadequate space.
2. Do the painting off the Plant.

The last comparison of on-plant versus off-plant painting was in 1966. Using those figures on the volume we will do in 1972 indicates a penalty of at least \$40,000 for off-plant painting (excluding the cost of additional cars which may be necessary). Obviously this figure is not accurate but indicates a range of magnitude. There is also the possibility of considerable labor relations difficulty with a decision to do the work off-plant. Another course of action -- building of another paint facility -- is not being seriously considered because of the probable cost.

If, for whatever reasons, neither of the above alternates is acceptable a new set of problems exist. If it is decided that the facilities are not going to be made to conform to Class I, Division II specifications, a decision will be needed on how to proceed. This may prove difficult since it will not be as simple as to say "follow the NEC", but will require an objective decision on what is really needed to make the facility as safe as is reasonably possible to operate. In addition, such a decision might at some time in the future have to be defended to the U.S. government.

Several proposals have been made on part way measures. One such is to spray paint on "B" shift and do brush painting and repair work on "A" shift. While this is a possibility, it would cost \$10,000-\$20,000 for better lighting, require additional supervision, and really not solve the basic problem which at this point seems to be a legal one.

I would suggest that Safety department and the Paint group, and the H-C maintenance group acting jointly look in detail at the present operation to see what, if anything, may need to be done to assure safe operation from a practical standpoint. This recommendation can be reviewed, implemented, modified, etc. as is deemed necessary.


R. E. Conrad

REC:pmk

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purpose of fire control. Where topographical conditions are such that flowable or combustible liquids may flow from a reservoir, measures to constitute a fire hazard to property of others, provision shall be made to divert or stop the flow by dams, dikes, or other suitable means.

(c) Fire control—(1) Portable equipment. Portable fire extinguishment and control equipment shall be provided in such quantities and types as are needed for the special hazards of operation and storage.

(2) Water supply. Water shall be available in volumes and at adequate pressure to supply water hose streams for producing equivalent, automatic extinguishers, or water spray systems as the need is indicated by the special hazards of operation and storage.

(3) Special equipment. Special extinguishing equipment such as that utilizing foam, inert gas, or dry chemical shall be provided as the need is indicated by the special hazards of operation and storage.

(4) Scope. This section applies to the handling, storage, and use of flammable and combustible liquids with a flash point below 200° F. This section does not apply to:

(1) Bulk transportation of flammable and combustible liquids;

(2) Storage, handling, and use of fuel oil tanks and containers connected with oil burning equipment;

(3) Storage of flammable and combustible liquids on farms;

(4) Liquids without flashpoints that may be flammable under some conditions, such as certain halogenated hydrocarbons and mixtures containing halogenated hydrocarbons;

(5) Mists, sprays, or foams, except flammable aerosols covered in paragraph (d) of this section; or

(6) Installations made in accordance with requirements of the following standards:

(i) National Fire Protection Association Standard for Drycleaning Plants, NFPA No. 32-1970;

(ii) National Fire Protection Association Standard for the Manufacture of Organic Coatings, NFPA No. 35-1970;

(iii) National Fire Protection Association Standard for Solvent Extraction Plants, NFPA No. 36-1967; or

(iv) National Fire Protection Association Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines, NFPA No. 37-1970.

§ 1910.107 Spray finishing using flammable and combustible materials.

(a) Definitions applicable to this section—(1) Aerated solid powders. Aerated powders shall mean any powdered material used as a coating material which shall be fluidized within a container by passing air uniformly from below. It is common practice to fluidize such materials to form a fluidized powder bed and then dip the part to be coated into the bed in a manner similar to that used in liquid dipping. Such beds are also

used as sources for powder spray operations.

(2) Spray area. Any area in which dangerous quantities of flammable vapors or mists, or combustible residues, dusts, or debris are present due to the operation of a spray booth.

(3) Spray booth. A power-ventilated structure provided to enclose or accommodate a spraying operation to confine and limit the escape of spray, vapor, and residue, and to safely conduct or direct them to an exhaust system.

(4) Waterwash spray booth. A spray booth equipped with a water washing system designed to minimize dusts or residues entering exhaust ducts and to permit the recovery of overspray finishing material.

(5) Dry spray booth. A spray booth not equipped with a water washing system as described in subparagraph (4) of this paragraph. A dry spray booth may be equipped with (i) distribution or baffle plates to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct; or (ii) overspray dry filters to minimize dusts; or (iii) overspray dry filters to minimize dusts or residues entering exhaust ducts; or (iv) overspray dry filter rolls designed to minimize dusts or residues entering exhaust ducts; or (v) where dry powders are being sprayed, with powder collection systems to arranged in the exhaust to capture oversprayed material.

(6) Fluidized bed. A container holding powder coating material which is aerated from below so as to form an air-supported expanded cloud of such material through which the preheated object to be coated is immersed and transported.

(7) Electrostatic fluidized bed. A container holding powder coating material which is aerated from below so as to form an air-supported expanded cloud of such material which is electrically charged with a charge opposite to the charge of the object to be coated; such object is transported through the container immediately above the charged and aerated materials in order to be coated.

(8) Approved. Shall mean approved and listed by the following nationally recognized testing laboratories: Underwriters Laboratories, Inc.; Factory Mutual Engineering Corp.

(9) Listed. See "approved" in § 1910.107 (a) (8).

(b) Spray booths—(1) Construction. Spray booths shall be substantially constructed of steel not thinner than No. 18 U.S. gauge, securely and rigidly supported, or of concrete or masonry, except that aluminum or other substantial non-combustible material may be used for intermittent or low volume spraying. Spray booths shall be designed to sweep air currents toward the exhaust outlet.

(2) Interiors. The interior surfaces of spray booths shall be smooth and continuous without edges and otherwise designed to prevent pocketing of residues and facilitate cleaning and washing without injury.

(3) Floors. The floor surface of a spray booth and operator's working area, if combustible, shall be covered with non-combustible material of such character as to facilitate the safe cleaning and removal of residues.

(4) Distribution of baffle plates. Distribution or baffle plates, if installed to promote an even flow of air through the booth or cause the deposit of overspray before it enters the exhaust duct, shall be of noncombustible material and readily removable or accessible on both sides for cleaning. Such plates shall not be located in exhaust ducts.

(5) Dry type overspray collectors—(exhaust air filters). In conventional dry type spray booths, overspray dry filters or filter rolls, if installed, shall conform to the following:

(i) The spraying operations except electrostatic spraying operations shall be so designed, installed and maintained that the average air velocity over the open face of the booth, (or booth cross section during spraying operations) shall be not less than 100 linear feet per minute. Electrostatic spraying operations may be conducted with an air velocity over the open face of the booth of not less than 60 linear feet per minute, or more, depending on the volume of the finishing material being applied and its flammability and explosion characteristics. Visible gauges or audible alarm or pressure activated devices shall be installed to indicate or insure that the required air velocity is maintained. Dry spray booths equipped with a filter roll which is automatically advanced when the air velocity is reduced to that specified in this subdivision should be arranged to cause shutdown of spraying operations if the filter roll fails to advance automatically. Maintenance procedures should be established to assure replacing filter pads before excessive restriction to airflow occurs. Filter pads should be inspected after each period of use and clogged filter pads discarded and replaced. Filter rolls shall be inspected to insure proper replacement of filter media.

(ii) All discarded filter pads and filter rolls shall be immediately removed to a safe, well-detached location or placed in a water-filled metal container and disposed of at the close of the day's operation unless maintained completely in water.

(iii) The location of filters in a spray booth shall be so as to not reduce the effective booth enclosure of the articles being sprayed.

(iv) Space within the spray booth on the downstream and upstream sides of filters shall be protected with approved automatic sprinklers.

(v) Filters or filter rolls shall not be used when applying a spray material known to be highly susceptible to spontaneous heating and ignition.

(vi) Clean filters or filter rolls shall be noncombustible or of a type having a combustibility not in excess of class 2 filters as listed by Underwriters' Labora-

No. 30 No. 35

NO. 33

NO. 33

No. 32 No. 36

No. 33 No. 37

ETH00003649

atories, Inc. Filters and filter rolls shall not be alternately used for different types of coating materials, where the combination of materials may be conducive to spontaneous ignition. See also paragraph (g) (6) of this section.

(6) *Frontal area.* Each spray booth having a frontal area larger than 9 square feet shall have a metal deflector or curtain not less than 2½ inches deep installed at the upper outer edge of the booth over the opening.

(7) *Conveyors.* Where conveyors are arranged to carry work into or out of spray booths, the openings therefor shall be as small as practical.

(8) *Separation of operations.* Each spray booth shall be separated from other operations by not less than 3 feet, or by a greater distance, or by such partition or wall as to reduce the danger from juxtaposition of hazardous operations. See also paragraph (c) (1) of this section.

(9) *Cleaning.* Spray booths shall be so installed that all portions are readily accessible for cleaning. A clear space of not less than 3 feet on all sides shall be kept free from storage or combustible construction.

(10) *Illumination.* When spraying areas are illuminated through glass panels or other transparent materials, only fixed lighting units shall be used as a source of illumination. Panels shall effectively isolate the spraying area from the area in which the lighting unit is located, and shall be of a noncombustible material of such a nature or so protected that breakage will be unlikely. Panels shall be so arranged that normal accumulations of residue on the exposed surface of the panel will not be raised to a dangerous temperature by radiation or conduction from the source of illumination.

(c) *Electrical and other sources of ignition.*—(1) *Conformance.* All electrical equipment, open flames and other sources of ignition shall conform to the requirements of this paragraph, except as follows:

(i) Electrostatic apparatus shall conform to the requirements of paragraphs (h) and (i) of this section;

(ii) Drying, curing, and fusion apparatus shall conform to the requirements of paragraph (j) of this section;

(iii) Automobile undercoating spray operations in garages shall conform to the requirements of paragraph (k) of this section.

(iv) Powder coating equipment shall conform to the requirements of paragraph (l) of this section.

(2) *Minimum separation.* There shall be no open flame or spark producing equipment in any spraying area nor within 20 feet thereof, unless separated by a partition.

(3) *Hot surfaces.* Space-heating appliances, steam pipes, or hot surfaces shall not be located in a spraying area where deposits of combustible residues may readily accumulate.

(4) *Wiring conformance.* Electrical wiring and equipment shall conform to the provisions of this paragraph and

shall otherwise be in accordance with subpart S of this part.

(5) *Combustible residues, areas.* Unless specifically approved for locations containing both deposits of readily ignitable residue and explosive vapors, there shall be no electrical equipment in any spraying area, whereon deposits of combustible residues may readily accumulate, except wiring in rigid conduit or in boxes or fittings containing no taps, splices, or terminal connections.

(6) *Wiring type approved.* Electrical wiring and equipment not subject to deposits of combustible residues but located in a spraying area as herein defined shall be of explosion-proof type approved for Class I, group D locations and shall otherwise conform to the provisions of subpart S of this part, for Class I, Division 1, Hazardous Locations. Electrical wiring, motors, and other equipment outside of but within twenty (20) feet of any spraying area, and not separated therefrom by partitions, shall not produce sparks under normal operating conditions and shall otherwise conform to the provisions of subpart S of this part for Class I, Division 2 Hazardous Locations.

(7) *Lamps.* Electric lamps outside of, but within twenty (20) feet of any spraying area, and not separated therefrom by a partition, shall be totally enclosed to prevent the falling of hot particles and shall be protected from mechanical injury by suitable guards or by location.

(8) *Portable lamps.* Portable electric lamps shall not be used in any spraying area during spraying operations. Portable electric lamps, if used during cleaning or repairing operations, shall be of the type approved for hazardous Class I locations.

(9) *Grounding.* (i) All metal parts of spray booths, exhaust ducts, and piping systems conveying flammable or combustible liquids or aerated solids shall be properly electrically grounded in an effective and permanent manner.

(ii) "Airless" high-fluid pressure spray guns and any conductive object being sprayed should be properly electrically grounded.

(d) *Ventilation.*—(1) *Conformance.* Ventilating and exhaust systems shall be in accordance with the Standard for Blower and Exhaust Systems for Vapor Removal, NFPA No. 91-1981, where applicable and shall also conform to the provisions of this section.

(2) *General.* All spraying areas shall be provided with mechanical ventilation adequate to remove flammable vapors, mists, or powders to a safe location and to confine and control combustible residues so that life or property is not endangered. Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and drying finishing material residue to be exhausted.

(3) *Independent exhaust.* Each spray booth shall have an independent exhaust duct system discharging to the exterior of the building, except that multiple

cabinet spray booths in which identical spray finishing material is used with a combined frontal area of not more than 18 square feet may have a common exhaust. If more than one fan serves one booth, all fans shall be so interconnected that one fan cannot operate without all fans being operated.

(4) *Fan-rotating element.* The fan-rotating element shall be nonferrous or nonsparking or the casing shall consist of or be lined with such material. There shall be ample clearance between the fan-rotating element and the fan casing to avoid a fire by friction, necessary allowance being made for ordinary expansion and leading to prevent contact between moving parts and the duct or fan housing. Fan blades shall be mounted on a shaft sufficiently heavy to maintain perfect alignment even when the blades of the fan are heavily loaded, the shaft preferably to have bearings outside the duct and booth. All bearings shall be of the self-lubricating type, or lubricated from the outside duct.

(5) *Electric motors.* Electric motors driving exhaust fans shall not be placed inside booths or ducts. See also paragraph (c) of this section.

(6) *Belts.* Belts shall not enter the duct or booth unless the belt and pulley within the duct or booth are thoroughly enclosed.

(7) *Exhaust ducts.* Exhaust ducts shall be constructed of steel and shall be substantially supported. Exhaust ducts without dampers are preferred; however, if dampers are installed, they shall be maintained so that they will be in a full open position at all times the ventilating system is in operation.

(8) Exhaust ducts shall be protected against mechanical damage and have a clearance from unprotected combustible construction or other combustible material of not less than 18 inches.

(9) If combustible construction is provided with the following protection applied to all surfaces within 18 inches, clearances may be reduced to the distances indicated:

(a) 22-gage sheet metal on ¼-inch 12 inches.

(b) 20-gage sheet metal on ¼-inch 9 inches.

(c) 22-gage sheet metal on 1-inch 2 inches.

(d) Where ducts are protected with an approved automatic

sprinkler system, properly

maintained, the clearance re-

quired in subdivision (1) of this

subparagraph may be reduced to

3 inches.

(3) *Discharge clearance.* Unless the

spray booth exhaust duct discharges

from a water-wash spray booth,

the discharge point shall be

less than 6 feet from any combustible

exterior wall or roof nor directed

the direction of any combustible

structure or unprotected opening in a

noncombustible exterior wall within

feet.

(9) *Air exhaust.* Air exhaust

spray operations shall not be directed