



South Coast
AIR QUALITY MANAGEMENT DISTRICT

CENTRAL OFFICE
9150 E. FLAIR DRIVE, EL MONTE, CALIFORNIA 91731

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July 6, 1979

To All Producers of Vinyl Chloride
or Polymerized Vinyl Chloride
and Other Interested Parties

WORKSHOP ON DISTRICT RULE 1005.1

You are invited to a public workshop to further discuss
the proposed District Rule 1005.1, Standards for Vinyl
Chloride, the latest of which is attached.

The workshop is scheduled for July 26, 1979, at 10 a.m.
in the SCAQMD Executive Conference Room, 9150 Flair Drive,
El Monte.

If you have any questions or comments in this matter,
please feel free to call me at (213) 572-6434.

Very truly yours,

John Mosher
John Mosher
Air Programs Division

JM:ko

Attachment

UCC
022408

Rule 1005.1 - Standards for Vinyl Chloride

(a) Applicability

- (1) This rule applies to plants which produce:
 - (A) Ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene
 - (B) Vinyl chloride by any process, and/or
 - (C) One or more polymers containing any fraction of polymerized vinyl chloride
- (2) This rule does not apply to equipment used in research development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of no more than 0.19 cubic meters (50 gal.).
- (3) The provisions of this rule shall be effective on _____ 1980. (Specified date, ca May 1, 1980, to correspond to 8 months after adoption of rule by District Board.)

(b) Definitions

- (1) Ethylene Dichloride Plant includes any plant which produces ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene.
- (2) Vinyl Chloride Plant includes any plant which produces vinyl chloride by any process.
- (3) Polyvinyl Chloride Plant includes any plant where vinyl chloride alone or in combination with other materials is polymerized.

- (4) Slip Gauge means a gauge which has a probe that moves through the gas/liquid interface in a storage or transfer vessel and indicates the level of vinyl chloride in the vessel by the physical state of the material the gauge discharges.
- (5) Inprocess Wastewater means any water which, during manufacturing or processing, comes into direct contact with vinyl chloride or polyvinyl chloride or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing vinyl chloride or polyvinyl chloride but which has not been discharged to a wastewater treatment process or discharged untreated as wastewater.
- (6) Wastewater Treatment Process includes any process which modifies characteristics such as BOD (Biological Oxygen Demand), COD (Chemical Oxygen Demand), TSS (Total Suspended Solids), and pH, usually for the purpose of meeting effluent guidelines and standards; it does not include any process the purpose of which is to remove vinyl chloride from water to meet requirements of this rule.
- (7) In Vinyl Chloride Service means that a piece of equipment contains or contacts either a liquid

that is at least 10 percent by weight vinyl chloride or a gas that is at least 10 percent by volume vinyl chloride.

- (8) Latex resin means a resin which is produced by a polymerization process which initiates from free radical catalyst sites and is sold undried.
- (9) Bulk resin means a resin which is produced by a polymerization process in which no water is used.
- (10) Ethylene Dichloride Purification includes any part of the process of ethylene dichloride production which follows ethylene dichloride formation and in which finished ethylene dichloride is produced.
- (11) Vinyl Chloride Purification includes any part of the process of vinyl chloride production which follows the formation of vinyl chloride and in which finished vinyl chloride is produced.
- (12) Reactor includes any vessel in which vinyl chloride is partially or totally polymerized into polyvinyl chloride.
- (13) Stripper includes any vessel in which residual vinyl chloride is removed from polyvinyl chloride resin, except bulk resin; in the slurry form by the use of heat and/or vacuum. In the case of bulk resin, stripper includes any vessel which is used to remove

residual vinyl chloride from polyvinyl chloride resin immediately following the polymerization step in the plant process flow.

- (14) Leak means the escape of any detectable level of vinyl chloride, above the background level. Such determination shall be made within 5 cm of the potential source, using an analyzer employing flame ionization or photodetection methods, which may be portable, and having a sensitivity of at least 1 ppm.
- (15) Background level means the concentration of vinyl chloride in the atmosphere within the plant premises, which is not influenced by any specific emission point, and which is determined 3 meters upwind of any potential source being inspected.
- (16) Designated Plant means an ethylene dichloride, vinyl chloride or polyvinyl chloride plant.
- (17) Continuous monitoring means that sampling shall be done on a continuous basis, with actual samples being taken at least every fifteen minutes.
- (18) Modification means a physical change in, or a change in the method of operation of, a designated plant.
For the purposes of this definition:
 - (A) Routine maintenance or repair shall not be considered to be physical changes, and
 - (B) An increase in production rate or operating hours shall not be considered to be a change

in the method of operation, provided that these increases are not contrary to any existing permit to operate conditions.

(c) Control Requirements

After the effective date of this rule, a person operating a designated plant shall vent the following equipment containing vinyl chloride to air pollution control equipment or other processes which comply with the requirements of subparagraph (f) of this rule:

- (1) Vents or openings of or appurtenances venting:
 - (A) Reactors until maximum measured concentration within the reactor is below 1 ppm
 - (B) Storage tanks or surge tanks
 - (C) Purification vessels or other equipment used for purification
 - (D) Stripper vessels
 - (E) Combination reactor-stripper vessels
 - (F) Mixing, weighing or holding tanks
 - (G) Monomer recovery equipment
 - (H) Vessels and other equipment used after the stripper process
 - (I) Railroad tank cars, tank trucks and shipping containers

- (2) Slip gauges
- (3) Other equipment designated in writing by the Executive Officer as necessary to be vented to ensure that the California vinyl chloride ambient air standard is not exceeded.
- (4) Emergency-venting equipment, or the equivalent (i.e. surge tanks, holding vessels, etc.)
- (5) Provisions of (c)(1)(A) shall not apply to equipment which has been purged by water displacement and the purged gas vented to air pollution control equipment.

(d) Procedural Requirement

After the effective date of this rule, a person operating a designated plant shall comply with the following procedures:

- (1) Vinyl chloride loading and unloading lines shall not be opened to the atmosphere unless:
 - (A) The quantity of vinyl chloride in the lines is reduced to the equivalent of 0.0038 m^3 (0.13 ft^3) at standard temperature and pressure; or
 - (B) The vinyl chloride loading and unloading lines have been purged with air or inert gas, or have been evacuated, for a minimum of five minutes.

- (C) All vinyl chloride vapors resulting from the operations specified in the above subparagraphs (A) and (B) shall be vented to air pollution control equipment or other processes in accordance with the provisions of subparagraph (f) of this rule.
- (2) Unused portions of samples shall be returned to the production process. Sample containers in vinyl chloride service shall be purged into a closed process system or air pollution control equipment.
- (3) Vinyl chloride emissions to the atmosphere from inprocess wastewater shall be reduced as follows:
- (A) The concentration of vinyl chloride in each inprocess wastewater stream containing greater than 10 ppm vinyl chloride measured immediately as it leaves a piece of equipment and before being mixed with any other inprocess wastewater stream is to be reduced to no more than 10 ppm vinyl chloride (by weight), before being mixed with any other inprocess wastewater stream which contains less than 10 ppm vinyl chloride, before being discharged to a wastewater treatment process, or before being discharged untreated as a wastewater.

This paragraph does apply to water which is used to displace vinyl chloride from equipment before such equipment is opened to the atmosphere in accordance with subparagraph ^c(~~a~~)(~~1~~) of this rule ~~or with (c)~~, but does not apply to water which is used to wash out equipment after the equipment has already been opened to the atmosphere.

- (B) Any vinyl chloride removed from the inprocess wastewater is to be ducted through the air pollution control equipment specified in subparagraph (f).

(e) Ambient Air Concentration Requirements

After the effective date of this rule, a person operating a designated plant shall not allow the discharge into the atmosphere of any materials which result in ambient concentrations of vinyl chloride which are equal to or greater than 10 parts per billion of vinyl chloride, 24-hour average measured at any point beyond the property line of such plant. Such measurements shall be performed using methods specified by the California Air Resources Board in establishing the Vinyl Chloride Ambient Air Quality Standard. A copy of such methods may be obtained from the District Executive Officer upon request.

(f) Air Pollution Control Equipment

(1) The air pollution control equipment specified in this rule shall at all times operate at an efficiency sufficient to limit the concentration of vinyl chloride in the discharge of such control equipment to less than 1 gram per hour.

(2) Other methods may be employed which reduce vinyl chloride emissions to the same degree of subparagraph (f)(1) provided that:

(A) A control plan is submitted which details the measures which the owner or operator intends to implement; such measures are equivalent to those required by subparagraph (f)(1); such plan is approved by the Executive Officer; and

(B) Applications are submitted for new permits to construct or operate both the basic and control equipment involved regardless of whether modifications or additions are to be made either to the basic or control equipment, or both.

Existing permits to operate pertaining to the basic and control equipment as specified above shall be surrendered and canceled at the time such new permits to construct or operate

are issued. Such new permits shall not be effective unless surrender of such existing permits has been made. If such new permits are denied, such existing permits surrendered pursuant to this section shall be re-issued and restored subject to the same conditions which were applicable to the original permits prior to surrender and the provisions of subparagraph (f)(1) shall be applicable. The Executive Officer shall impose those written conditions on such new permits specifying emission limits or other conditions which may be necessary to insure that the emission reductions required under this rule are made.

- (4) A continuous monitoring system measuring the concentration and mass flow rate of vinyl chloride discharged from the control equipment shall be installed. Violations of the standard specified in subparagraph (f)(1), and as measured by such systems, shall be reported to the Executive Officer within two hours of such measurements. The records from such monitoring equipment shall be maintained for two years and shall be summarized monthly in the form and manner specified by the Executive Officer.

(g) Seals

After the effective date of this rule, seals on equipment located in designated plants shall comply with the following:

- (1) Vinyl chloride emissions from seals on rotating pumps shall be minimized by installing sealless pumps or by installing pumps with double mechanical seals.
- (2) Vinyl chloride emissions from rotating compressors, ~~reciprocating compressors~~, or agitators shall be minimized by installing double mechanical seals.
- (3) Double mechanical seals as specified in subparagraph (g)(1) and (g)(2) shall be installed and operated so that any leak that occurs shall be into the pump, compressor, or vessel agitated.

(h) Leaks

After the effective date of this rule:

- (1) A person shall not use any compressor, flange, pump, valve, hood, storage container, process vessel, or other equipment containing or using vinyl chloride in a designated plant unless such equipment is free of vinyl chloride leaks, except as provided in subparagraph (h)(5).

- (2) A person shall not use any rail tank cars, tank trucks or shipping containers used to transport vinyl chloride unless such equipment is free of vinyl chloride leaks, except as provided in subparagraph (h)(5).
- (3) All flanges, pumps, valves, storage containers and process vessels shall be inspected by _____ 1980 (ca May 31, 1980). Thereafter, all compressors, pumps and valves shall be inspected each three months following such initial inspections. All flanges, reactors and process equipment shall be inspected each six months following such initial inspections. All inspections shall be the responsibility of the Plant Operator, and shall include checks for possible leakage as defined in subparagraph (b)(14).
- (4) All detected leaks shall be recorded in an inspection record along with the date and inspector's initials. Such records shall be maintained for two years.
- (5) Any detected leaks shall be repaired and eliminated within 24 hours of detection.

(i) Ambient Air Monitoring

After the effective date of this rule, a person operating a designated plant shall comply with the following requirements for ambient air monitoring facilities:

- (1) Provide and operate four air monitoring stations to continuously measure and record ambient concentrations of vinyl chloride. Such monitoring stations shall be situated in the near vicinity of such plants and located as specified by the Executive Officer; and
- (2) Provide and operate an additional four air monitoring stations to continuously measure and record ambient concentrations of vinyl chloride. Such monitoring stations shall be situated in populated areas in the vicinity of such plants and located as specified by the Executive Officer.
- (3) Calibrate and maintain the required ambient air monitoring stations in accordance with procedures filed with and approved by the Executive Officer. Such procedures shall be developed by the Operator and filed with the Executive Officer by November 30, 1979. As stated in subparagraph (e), such ambient measurements shall be performed using methods specified by the California Air Resources Board in establishing the Vinyl Chloride Ambient Air Quality Standard, or procedures certified by them to be equivalent.
- (4) Keep the records from the required air monitoring stations for a period of two years. The data from

such records shall be summarized monthly and shall be submitted in the manner and form specified by the Executive Officer.

- (5) Breakdowns of the vinyl chloride monitoring equipment (both ambient and emission monitors) shall be reported to the Executive Officer within 12 hours after the time such breakdowns are first found. Non-operation or faulty operation of such equipment for longer than 48 hours shall be deemed a violation of this rule.

(j) New or Modified Plants

After May 1, 1980, a person shall not build or modify an existing designated plant unless that person demonstrates to the Executive Officer that the ambient air quality will not exceed the California Vinyl Chloride Ambient Air Standards as a result of the emissions from such plant.

(k) Severability

If any portion of this rule shall be found to be unenforceable, such finding shall have no effect on the enforceability of the remaining portions of the rule, which shall continue to be in full force and effect.