1. Title (Typed slide)

2. Type Slide

Today we want to talk to you again about ways to further reduce your exposure to vinyl chloride monomer (VCM), the raw material we use here in the manufacture of poly-vinyl chloride (PVC) plastic resin.

3. Type Slide

Vinyl chloride monomer became regulated under the Occupational Safety and Health Act in April, 1975. These regulations apply to the manufacture, reaction, transportation, storage, handling, or use of VCM or PVC.

4. Type Slide

Because of the technological advances over the last year, these regulations do <u>not</u> apply to the handling or use of products made from PVC, such as Compound, Dry Blend etc.

5. Tank Farm/ Super Type

VCM, stored in these tanks, is a colorless, sweet smelling gas at normal temperatures and a liquid under pressure. It is handled as both in our plant.

6. Frostbite Limb

You should avoid situations where VCM could be smelled or touched. Liquid VCM could cause your skin to become severely frostbitten.

7. Gas leak cartoon

You are likely to come in contact with VCM only through leaks or spills.

8.	Type slide or Reynolds	VCM has been labeled as a hazardous material. Breathing in high concentrations can cause dizziness or create a narcotic effect.
9.	Type Slide	VCM has a flash point of minus -108 degrees Farenheit and has explosive limits that make it three times as flammable as gasoline.
10.	New Slide (Fire)	VCM releases highly toxic and irritating fumes of hydrogen chloride gas when it burns. Inhalation of sufficient quantities can cause severe lung damage or death.
11.	New Slide (Nurse)	Conoco, through the Medical Division, is continually monitoring the health of its employees by regularly testing blood samples. These samples are drawn twice per year.
12.	Type slide	Disclosures over the past years have indicated that exposure to EXCESSIVE concentrations of VCM over LONG periods of time could cause cancer of the liver.
13.	New slide	In the history of the manufacture of VCM and PVC, there have been 48 deaths recorded worldwide from angiosarcoma, the rare liver cancer linked to VCM.
14.	Type slide	The data to substantiate the link between liver cancer and VCM was released to the public in January, 1974 when B.F. Goodrich reported that the death of two employees may have been occupationally related to VCM.

15. Type slide

It is believed that the victims had been exposed to large concentrations of VCM over a number of years.

16. New slide

Twenty-One of the deaths were reported in the United States where there are an estimated 6,500 people in PVC/VCM manufacturing and about 97,000 in plastics and resin fabrication.

17. Type slide

To date, there have been no cases of angiosarcoma in any of Conoco's plants.

18. Type slide

Several years before the discovery of angiosarcoma, a finger bone disease, acroostosteolysis, known to us as AOL, was discovered and linked to the manual cleaning of PVC reactors.

19. Type slide

AOL is characterized by any combination of:

-- a sensation or feeling that hands are cold,

-- very small areas of damage to finger bones that are detected by X-ray examination,

-- and a thickening and drying of the skin of the hands and forearms.

20. Type slide

The condition is reversable by removing the employee from exposure to liquid VCM.

21. New typed slide

Conoco Chemicals is very concerned about the safety of its employees and therefore has done everything possible to reduce employee exposure to VCM.

22. Type slide

With your help, we have achieved the maximum permissible exposure limit of one part per million averaged over an eight hour period plantwide.

23. Type slide

Certain parts of our plants will, however, continue to be designated as regulated areas because VCM concentrations occasionally exceed the maximum permissable exposure limit.

24. Sign

Signs which say REGULATED AREA - CANCER SUSPECT AGENT AREA - AUTHORIZED PERSONNEL ONLY - are posted at each entrance . . .

25. Split shot

There are two remaining regulated areas in our plant. They are Large Reactors and certain parts of the VCM Tankfarm .

26. Sign In Area

Before entering a regulated area, EVERYONE must sign the regulated area log for that area.

27. Type slide

Regulated areas are restricted to authorized personnel who have work assignments in those areas. All other personnel must stay out.

28. New slide

The VCM health regulation also requires that appropriate respiratory protection be made available in plants manufacturing PVC or VCM.

29. New slide

NIOSH has approved an organic vapor cannister type gas mask for use in environments of up to 25 ppm of VCM, however a 10 ppm maximum is used in our plant for this cannister respirator.

		Cannisters must be replaced after a total of four hours use or at the end of your shift, whichever comes first.
30.	New slide Full face/ half/Scott Air Pak	You will continue to be required to use respirators connected to our fresh air supply or a Scott Air Pak when:
31.	Old 33 slide	Opening and entering reactors, recovery knock-out tank, blow down tank, receiver or any vessel which has contained VCM. . .
32.	Type slide (old 45)	Take down and clean out of recovery lines. . .
33.	Old 40 slide	Changing VCM filters after recovery . . .
34.	Old 41 slide	Sampling the large reactors . . .
35.	Old 43 slide	Connecting or disconnecting VC railcars or working in the VCM compressor shed . . .
36.	Type slide (old 49)	Any job in an area where the concentration of VCM is greater than 10 ppm requires fresh air protection.
37.	Type slide (old 50)	Remember: Between 1 ppm and 10 ppm, use an approved cannister gas mask. Between 10 ppm and 1,000 ppm use an air-line respirator. Above 1,000 ppm or in unknown concentrations, use a Scott Air Pak.
38.	New Shot	The company has no objections to beards.

39.	New shot	However, you should know for your safety if a beard interferes with your achieving a tight seal on the face mask of your respirator, the beard should be trimmed or removed.
40.	New shot	Employees with beards will be requested to demonstrate by test to their Supervisor that they can maintain a godd face seal.
41.	Type slide (old 54)	Minor mechanical failure such as leaky valves and seals could result in VCM concentrations in excess of the permissible limits, which are: 15 minutes at 5 ppm and an 8 hr. average of 1 ppm or less.
42.	Old 60 slide	Some indicators of VCM leaks are small ice formations, condensed water or frost on pipes, and hissing sounds from processing equipment which contains VCM like valves, flanges, packing and the like.
43.	New Shot	Our continuous monitoring system graphically records the concentrations of VCM throughout the plant on the G.C. panels located in Large Reactor Control Room, Dryer Control Room and Q.C. Lab.
44.	Old SLide 57	The Lead Operator or Lead Technician will notify you of concentrations above the permissible limits of 1 ppm in your area either by two-way radio or the paging system.

45. New shot (Repeat respirator)	If the job you are doing requires you to remain in the area where VCM concentrations are above the permissible limits, you must wear the appropriate respiratory protection.
46. Type slide (old 59)	If you are not required to stay, you must remain away from the area until you have been notified that the VCM concentration is below the permissible limits.
47. New Shot	When necessary, you will be issued protective
	coveralls and gloves.
48. New shot	They must be worn along with your respiratory protection when: cleaning reactors. . .
49. Old #62	Unloading VCM tank cars . . .
50. Old #63	Cleaning out sweco screens . . .
51. Old 64 Type	or while performing any job where your skin might come in contact with liquid VCM.
52. New shot	Disposable protective clothing should be discarded after each use.
53. Old #66	The necessary VCM protective equipment will be issued to everyone, including non-employees. Non-employees will be required to use the protective equipment just as you do and to follow the same safety procedures regarding VCM.

54. old #67

The OSHA VCM Standard requires us to sample the air in our work areas for VCM by Personnel Dosimetry and by fixed multi point monitors. We use this information to help us minimize your personal exposure and to monitor our progress in the reduction of VCM concentration in the plant.

55. New shot

Our dosimetry equipment consists of a pump and a gas bag . . or . . .

56. New shot

Pump and charcoal tube .

57. New shot

The dosimetry samples are analyzed for VCM content in our lab.

58. Reshoot - Teresa

These results are tabulated, recorded and made available at your request by asking your Supervisor or Department Head.

59. Old 71

Our four (4) Honeywell fixed point automated gas chromatograph monitoring systems sample air in all areas of our plant 24 hrs. per day, year around.

60. New Shot (Sensors)

Sensors like these will collect air samples at more than forty (40) points throughout our plants..

61. Old 73

The gas chromatograph analyzes these samples and sets off an alarm when a concentration of VCM is higher than the permissible limit of 1 ppm.

62. Old 74

A person on each shift is designated to notify employees of high VCM levels in their areas.

63. Old 75

All people in the high level area who are not equipped with appropriate respiratory protection must leave the area immediately after notification.

64. Old 78

You will continue to be trained in the emergency procedures to be followed in the event of an unforeseeable major VCM gas release or fire.

65. New Shot S & H Manual

These procedures are fully detailed in the PVC Plant Safety and Health Manual for our plant.

66. Old 83

We will continue our medical surveillance of all employees which includes liver profile, blood work and urinalysis studies. These provide the best diagnostic test available to detect the symptoms of angiosarcoma.

67. Old 84

You will also be given, at the Company's expense, a periodic complete physical examination including chest X- ray and pulmonary funtion . . .

68. Old 85

. . . Along with your compelte medical and work background histories.

69. Old 87

We legibly and appropriately label containers of PVC, VCM, PVC waste from reactors and waste contaminated with VCM.

70. Old 88

Also, we are required to keep and maintain records of our personnel dosimetry, Honeywell readings, medical histories, and authorized personnel rosters. Also, your Doctor will be furnished any and all medical records you request in writing.

71. New shot
(Close-up record log)

We maintain records regarding regulated areas, number of employees working in those areas, and all exposures in excess of 1 ppm as determined by personnel dosimeters.

72. Old 90

Copies of the current OSHA VCM Standard can be obtained by asking your Supervisor, Department Head or any member of the Safety Department.

73. Old 91

Okay, let's briefly review some of the major points we have just covered.

74. Repeat #8 slide

Remember, VCM has been labeled as a hazardous material. When breathed in high concentrations, it could cause dizziness or create a narcotic effect.

75. Repeat #9

VCM has a flash point of minus -108 degrees Farenheit and has explosive limits which make it three times as flammable as gasoline.

76.	Repeat #6	Contact with liquid VCM could cause your skin to become severely frostbitten.
77.	Repeat #12	Exposure to EXCESSIVE amount of VCM over LONG periods of time could cause liver cancer.
78.	Repeat #28	In each case, the appropriate respiratory protection will be provided for your use in VCM environments in excess of the permissible limits.
79.	Old 97	You will continue to be required to use an air supplied respirator when doing jobs where the potential for VCM exposure is greater than 10 ppm.
80.	Repeat #35	You will also be required to wear protective clothing when performing any job in which your skin could come in contact with liquid VCM.
81.	Repeat #61	To minimize your exposures to VCM and to check our progress in reducing VCM concentrations in the air, we are continuously sampling and monitoring the quality of plant air.
82.	Repeat S & H Shot #65	Know your emergency procedures as outlined in the Safety and Health Manual.
83.	Repeat #68	and finally, our medical surveillance program is for your protection.

84. Plant Aerial

Through your efforts, we are complying with the amended OSHA VCM regulations that went into effect in 1976. We ask that you continue to give your cooperation in helping us comply with any further regulations.

85. Old #103

Now, we'll have a question and answer period.

1.	Title Slide	Hello ladies and gentlemen. Today I want to show you the world of Conoco Chemicals...
2.	Two men in lab	The part of Continental Oil Company that has built a healthy, expanding business in converting crude oil and natural gas into chemicals.
3.	Pouring detergent plastic resin over globe	We'll be telling you how Conoco Chemicals supplies the world's detergent and plastics industries and what results from the work you do.
4.	Montage of products with model	Let's start with results: products our customers make from our products.
5.	Palmolive dishwashing liquid	Washing dishes . . .
6.	Putting detergent in machine	or clothes is a daily chore in our homes. Well, Conoco is the world's leading producer of raw materials for the detergents that we use.
7.	Lab Shot	We were the first to announce a scientific breakthrough in developing chemicals from petroleum for biodegradable -- or "soft" detergents . . .

(more)

19.	Pretty girl watering lawn	garden hose . . .
20.	Plastic pipe	and plastic pipe.
21.	Montage of products	Floor tiles, records and toys are also made from our PVC.
22.	Lab technician	Our chemicals go into lots of other industrial and consumer products from. . .
23.	Saturn Rocket take-off	rocket fuel. . .
24.	Vials of pills	to pharmaceuticals. . .
25.	Girl putting on Jergens hand lotion	and cosmetics and beauty lotions.
26.	1870 Train enroute	It all began back in the early 1870's when the railroads were rolling back the Western Frontier.
27.	Coal oil lamp	They carried with them coal oil lamps among new conveniences for the pioneer settlers.
28.	Issac Blake portrait	Issac E. Blake of Ogden, Utah saw a market for coal oil lamps. He and three western business pioneers. . .
29.	Butte, Montana facilities	incorporated the Continental Oil and Transportation company in November 1875.
30.	Horse-drawn Wagon	It started life with the sole purpose of distributing the petroleum products of other companies.

A

38.	Early Marland service station	In 1929 Marland and Continental merged under the name Continental Oil Company. . .
39.	Red triangle mark	and adopted the red traingle trademark. Headquarters moved to Ponca City.
40.	Capsule mark	Today Continental does not just find, produce, refine and market petroleum products.
41.	World map from annual report	It is a diversified enery and resources company with more than 40,000 employees in some 35 countries.
42.	7 Billion type line	In 1974 Conoco had annual sales in excess of 7 billion dollars.
43.	7 Billion and 16th Build	It is the 16th largest United States company in sales. . .
44.	7 Billion and 22nd-16th Build	And 22nd in assets. . .
45.	All figures Build	It is ranked among the top 50 companies in the world.
46.	Corporate building	Corporate headquarters is in Stamford, Conn.
47.	Ponca City aerial	Ponca City, where the largest of Conoco's seven refineries is located, is now the service center of the corporation.

(more)

55.	Vernon portrait	Leon Vernon is vice president-operations, responsible for Chemicals' manufacturing, marketing, supplies and distribution, and bio-medical and environmental affairs.
56.	Conoco Towers	Headquarters is in Conoco Towers at Greenway Plaza in Houston.
57.		Our marketing, accounting and other support groups are located here.
58.	Baltimore Aerial	We operate plants throughout the United States in Baltimore, Maryland... (3 second pause)
59.	Hammond	Hammond, Indiana. . . (5 second pause)
60.	Lake Charles Aerial	Lake Charles, Louisiana. . . (5 second pause)
61.	Pitt-Consol Facade	Newark, New Jersey. . .(5 sec.)
62.	Oklahoma City aerial	Oklahoma City, Oklahoma (3 sec.)
63.	Aberdeen Aerial	and Aberdeen , Miss. (5 sec.)
64.	Old Aberdeen Site	Lets talk for a few minutes about our Aberdeen plant. This plant was built by Thompson-Apex Company and originally called Monroe Manufacturing. It came on stream in 1963 as a 50 million pounds per year operation. Continental acquired it in 1964 along with other facilities since sold.

65. Conoco Plastics Slide

Continued expansion of the plant increased its capacity to a peak of nearly 350 million pounds per year in 1973. Compliance with OSHA and EPA regulations however, resulted in the shutdown of all the small reactor buildings reducing capacity to approximately 150 million pounds per year in 1975. The new capacity replacement project scheduled to come on stream in early 1978 will bring capacity back up to the 1973 level of 350 million pounds per year.

66. Chloride R/C's

Vinyl Chloride monomer is a water clear liquid shipped to our plant in tank railcars from Conoco's Lake Charles VCM Plant.

67. Storage Bullets

The VCM is stored in 3 seperate storage tanks. The two storage bullets hold 450,000 pounds each.

68. Sphere

In 1975, a 640,000 gallon sphere was constructed which holds 4.5 million pounds.

69. Piping to Lg. Rx.

From the storage tanks, the VCM is piped to the large reactor area.

70. Large Reactor

Conoco's Large Reactor Technology was the first of its kind in the world. In these reactors, Vinyl Chloride is converted from its liquid-monomer state into millions of very small solid white particles in a water slurry.

71. Dryers

The water is removed from the slurry in Rotary gas fired dryers such as these. Hot air is blown through the dryers and evaporates the water. The remaining small white particles are the end product called PVC Resin. This can be sold as is or transferred to other operations within the plant as a raw material.

72. Welex

Dry Blend is a product that uses Resin as a base raw material. The Welex mixers combine resin along with other raw materials to produce a product that is used in the production of rigid pipe.

73. P-1 Building

Alcohol from Conoco's Lake Charles Plant is reacted with other raw materials to make a clear oil known as plasticizer and is used in the compounding operation. It is this raw material that makes compound flexible.

74. Line 3 Mill

Various mixtures of PVC resin, plasticizer, color pigments and fillers are combined in the presence of heat and pressure on these mills to form Compound. Our customers receive Compound in a pellet form from which a finished product is manufactured by reheating.

75. Bags

All finished products leave our plant in one of the following: 50 pound bags. . .

(more)

76.	Gaylord	750 pound Gaylord boxes. . .
77.	Bulk Trailer	Bulk Hopper Trailers. . .
78.	Bulk R/C	Bulk Hopper Railcars. . . Plasticizer is either shipped in 55 gallon drums or tank trailers.
79.	Transportation	The Conoco Transportation Department is responsible for all shipments leaving the Aberdeen Plant.
80.	Organizational Chart	Let us now take a look at the operations support groups here at Aberdeen . . .
81.	Lab Shot	The Aberdeen Plant Laboratory monitors the quality of all our products. In addition, our chemists work hard to develop new products to meet our customers specifications.
82.	Admin. Services Shot	Administrative Services inludes all purchasing, accounting, receiving and secretarial functions. This group makes the paperwork flow smoothly.
83.	Safety Shot	The Safety Departments responsibilities are to maintain the health and safety of our employees and to protect plant equipment as well as improve employee skills.

(more)

84. Engineering Shot

Our design engineering group is divided into 2 functional groups: Process and Mechanical. Process Engineers specify process equipment and Mechanical Engineers handle all support engineering and field installation.

85. Aberdeen Aerial

A major concern of Conoco Chemicals is the assurance that its employees have a pleasant working environment. Several major projects have been completed to accomplish this.

86. Aeriator Pond

One of these is a series of Polution Control Ponds that meet the State Water Commission Standards.

87. Road Shot

Another project, completed in 1976, was the resurfacing of all plant roads.

88. Office Building

Also, a new office area was completed in September, 1975, which provided a central location for all Engineering, Operation Department Heads, Administration and Industrial Relations.

89. Large Reactor

There are several planned projects to be completed in the near future. One of these is 4 new large reactors which will more than double the size of the existing reactor department. As stated previously, these should be in operation by early 1978 and will return the plant to its 1973 capacity,

(more)

90.	Line 3 shot	A new compound unit is an important part of the Capital Budget for 1977. This unit will replace the out dated Banbury Line presently in use.
91.	P-1 Shot	The plasticizer unit will be expanded in order to supply the new compounding operations. This, too, is an important part of the 1977 Capital Budget.
92.	Aberdeen Aerial	With the current projects underway and the planned future projects, you can see the bright future in store for the Aberdeen Plant.
93.	Merger Book Cover	The Baltimore plant, built as a refinery in 1915, has been a part of Continental Oil since the merger with Marland.
94.	Baltimore Plant overview	In 1947 Conoco built its first petrochemical plant there to produce basic raw materials for household detergents and industrial cleaning compounds.
95.	New Nalkylene Unit	Facilities were expanded in 1965 to produce our prime soft detergent intermediate, NALKYLENE detergent alkylate.
96.	2 Men sampling product	The plant now produces, roughly 450 million pounds a year of some individual chemicals. . .
97.	2 Men loading railroad tankcar	which are used in a variety of applications from clothes-washing to the pickling of steel.

(more)

98. View of Alcohol plant

Conoco attracted worldwide attention in 1962 when it brought on stream a $10 million ALFOL [R] Alcohol Plant In Lake Charles.

99. Man in control room

The plant's capacity has been expanded twice until today it produces 200 million pounds of raw materials a year for the detergent, plasticizer and specialty chemical markets.

100. LCCP Normal Paraffin Unit

Another plant unit produces feedstocks for Baltimore's NALKYLENE [R] alkylate process.

101. VCM plant overview

A 600 million pounds per year vinyl chloride monomer (VCM) plant, then the world's largest...

102. Ethylene plant view across pond

and a 500 million pound ethylene plant, came on stream at Lake Charles in 1968.

103. Ethylene Terminal

Our new ethylene tanker terminal came on stream in 1974 at the Lake Charles complex's marine dock. It will be used for imported ethylene to supplement the production of our ethylene plant.

104. Ethylene towers

Ethylene is a basic building block of the chemical industry. More than half of our annual production is used as feedstock by the VCM plant and a large part of the remainder by the alcohol plant.

(more)

105.	VCM plant control panel	Under a licensing agreement with Stauffer Chemicals, the Lake Charles VCM plant produces this gaseous chemical intermediate used in the manufacture of PVC plastic resin.
106.	OKC Large Reactors	The Oklahoma City plant came on stream in 1971. It uses exclusively the large reactor technology developed by Conoco at Aberdeen.
107.	Control Panel Operators	This new technology for more economical manufacture of PVC resin is being offered for licensing all over the world.
108.	Plant construction	The plant was originally designed to produce 70 million pounds. But continued expansion of the plant raised its capacity to over 180 million pounds in 1974.
109.	Plant establishing view	Our Hammond plant produces a variety of sulfonates which are utilized as surfactants in biodegradable detergents.
110.	Detergent formula-cartoon	You won't find the word surfactant in a dictionary. It's a chemical term for "surface active agent." A detergent molecule in a cleaning product formulation is a surfacant.
111.	Molecule cartoon	It lowers surface tension of the water and improves water's ability to penetrate and loosen dirt.

112. Men loading tank

Baltimore and Lake Charles provide the feedstocks for Hammond's operation.

113. Foreman Ted Blue

The plant came on stream in 1969. It combined the operations of a Chicago plant, acquired from Stepan in 1952, and a batch sulfonation plant built in Hammond by Conoco in 1958.

114. Drumming operation

Our Newark plant, known as the Pitt-Consol Chemical Company, uses phenol and methanol feedstocks to manufacture a variety of cresylic acids.

115. 2 Men at Control board

The plant has a capacity of 50 million pounds a year.

116. Loader picking up drums

The cresylics are used as base raw materials by the plastics, rubber, oil additive and pharmaceutical industries.

117. Sampling

Since Pitt-Consol was formed in 1955, the plant has undergone extensive revision and expansion of its production facilities.

118. Superintendent/man in front of unit

Included was the construction of a unit to synthetically produce the cresylics. This technology was available in 1966 and the plant was built in time to take advantage of the decline of cresylics from natural sources.

(more)

119.	Salesman/car	Supporting our efforts are Conoco Chemical's domestic force of 18 sales managers and sales representatives, who sell our products coast-to-coast.
120.	Engineering group	. . . and the chemical section of Conoco's Research and Engineering Department in Ponca City. Here talented engineers and scientists help perfect our products and processes, and ways to improve the environment.
121.	Location map	Conoco Chemicals also makes and markets chemicals, including PVC resin, in more than 30 countries. We have eight affiliate companies with plants in:
122.	Condea	West Germany . . .(3 second pause)
123.	Nissan Conoco	Japan . . . (3 second pause)
124.	Petresa	Spain . . . (3 second pause)
125.	Vinatex-Havant	and England. (3 second pause)
126.	Brussels scene	Conoco Europe SA is our European marketing and sales office located in Brussels.
127.	Office Scene	It takes a lot of different people . . .(3 sec.)
128.	Engineer	. . . doing a lot of different jobs. . .(3 sec.)
129.	Mechanic	. . . to give Conoco success. . .(3 sec.)

(more)