

BOARD OF SUPERVISORS, COUNTY OF VENTURA, STATE OF CALIFORNIA

AIR POLLUTION CONTROL DISTRICT

TUESDAY, MAY 5, 1992, AT 10:00 A.M.

17

ALL MEMBERS PRESENT  
EXCEPT SUPERVISOR HOWARD

After hearing testimony of Richard Baldwin, Terri Thomas, James McBride, Lary Reid, Bruce Anselmo, and Doris Black, upon motion of Supervisor Lacey, seconded by Supervisor Erickson Kildee, and duly carried, the Board hereby approves the following matter:



Ventura County  
Air Pollution  
Control District

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Richard H. Baldwin  
Air Pollution Control Officer

May 5, 1992 (Agenda)

Air Pollution Control Board  
Ventura County Air Pollution Control District  
800 South Victoria Avenue  
Ventura, CA 93009

SUBJECT: PUBLIC HEARING ON 1991 AIR TOXICS "HOT SPOTS" ANNUAL REPORT AND "SIGNIFICANT" RISK LEVEL

RECOMMENDED ACTION:

1. Approve the 1991 Air Toxics "Hot Spots" Annual Report.
2. Approve a significant risk level of 10 in a million for the Air Toxics "Hot Spots" notification program.

STATEMENT FOR BOARD CONSIDERATION:

Background

The Air Toxics Information and Assessment Act of 1987 (AB 2588, Health and Safety Code Section 44300 et. seq.) was enacted to gather information on routine releases of toxics to the air, and assess their impact on the public health.

Over the past three years, the District has been developing an inventory of emissions of over 400 air toxic compounds from facilities in Ventura County. The emission inventory data is used to establish priorities for completion of air toxics health risk assessments.

The District is currently reviewing health risk assessments from 19 facilities in the first group subject to the program. AB 2588 requires that if, based on the results of the health risk assessment, the District determines that there is a significant risk due to air toxics emissions from a facility, the operator of the facility must notify exposed members of the public of the results of the health risk assessment. The term "significant risk" is not defined in the law. The determination of the level considered significant is left to individual air districts. Therefore, your Board must establish a "significant risk" threshold for the purpose of notifying neighboring residents and workers of emissions from a facility.

In December 1991, the District presented the 1991 Air Toxics "Hot Spots" Annual Report to your Board. A copy of the Annual Report was forwarded to each Board member's office in November 1991 and is on file with the Clerk of the Board. At the December 1991 hearing, your Board requested additional information on the impact of approving the staff recommended significant risk level of ten in a million.

Current Action

APCD staff is recommending that a lifetime excess cancer risk of ten in a million or greater be deemed significant. One in a million and 100 in a million were also considered as alternative significance levels.

The preliminary results of the first 19 health risk assessments are included in the Annual Report. The results are those reported by the facility operators and must still be reviewed by the District and the California EPA, Office of Environmental Health Hazard Assessment.

Based on the preliminary health risk assessment results, 8 facilities would be required to provide risk notification to an estimated 136 residences occupied by 446 people if the significance level is set at the recommended level of 10 in a million.

If the significance level is set at 100 in a million, notification of approximately 2 residences by 2 companies would be required.

At a significance level of 1 in a million, 18 companies would be required to send notices to a total of over 23,000 homes occupied by more than 50,000 people.

Setting the level at 100 in a million would result in very little information being given to the public. Conversely, at a significance level of one in a million, the large number of notices about low level risks could dilute the effect of the notices. Focus may be drawn away from the higher risk facilities which may warrant attention.

It should be noted that a lifetime excess cancer risk of 10 in a million is consistent with the public notification requirements of California's Proposition 65.

Attached is a discussion of the concept of significant risk and risk communication.

The recommended significance level was approved by the Air Pollution Control District Advisory Committee on March 24, 1992.

This letter has been reviewed by the Chief Administrative Office, County Counsel, the Public Health Officer, and the Environmental Health Department. If you have any questions, please contact Terri Thomas at extension 1405, or Karl E. Krause at extension 1420.



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RICHARD H. BALDWIN  
Air Pollution Control Officer

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Item 11  
5/5/92 rr

## ATTACHMENT

### AIR TOXICS "HOT SPOTS" PROGRAM SIGNIFICANT RISK AND PUBLIC NOTIFICATION

#### **What is Significant Risk?**

A significant risk has been defined as one which merits some type of response. That response may be as little as notifying the public about the risk or as severe as eliminating the risk altogether by eliminating the source. For our purposes today, the designation of a significant risk level will be used only to determine when public notification is required. **No reduction or elimination of emissions or risk is required under the Air Toxics "Hot Spots" Program.**

In deciding what level of risk is acceptable or significant, factors other than the magnitude of the risk must be considered by the decision makers. The significance of a risk is a societal (political), not a scientific decision.

Under the Toxics "Hot Spots" Program, we will be communicating about exposure to toxic chemicals. The public is unfamiliar with and fears chemicals, and the potential toxic effects include dreaded diseases such as cancer. Fear causes the public to believe that the risks are greater than they are. Relative to the overall lifetime odds of dying of cancer of 1 in 4 (250,000 in a million), air toxics are of minimal concern. Less than two-tenths of a percent of total cancer cases are estimated to be caused by air pollution in this country.

However, the numbers don't tell the whole story. Fear and actual risk are not well correlated. For example, many people would rather drive than fly, although statistically, driving is a riskier activity. Risk numbers are important, but decisions cannot be made on numbers alone. "Outrage factors" must be considered in deciding if a risk will be considered significant by the public. The risk as perceived by the public is affected by public outrage in addition to the actual magnitude of the hazard.

"Outrage factors" are non-technical elements of a situation which cause outrage and tend to increase the perception that a situation is high risk.

Involuntary exposure to a risk is an "outrage factor". High magnitude risks which are taken on voluntarily, such as skiing, are considered more acceptable than involuntary risks such as exposure to air pollution. A person has no control of their exposure to air pollution, making it seem riskier than a controllable activity like skiing. High consequence/low frequency events such as contracting cancer are perceived as riskier than low consequence/high frequency events, such as catching the flu.

Risk is perceived as less acceptable to the public if there is no visible benefit incurred in accepting the risk. In determining the level of significant risk, the benefits associated with the risk must be considered. Higher risks from toxic chemicals in the workplace than in the ambient air is considered acceptable, because people benefit from workplace exposures by receiving a salary.

Risks from an undetectable source such as air pollution is feared more than risks from a detectable source. One cannot protect oneself from an undetectable risk. Especially fearful is a delayed effect such as contracting cancer from an undetectable source such as toxic air pollution.

While risks from air toxics from stationary sources usually are not high relative to many other common risks, they involve a number of "outrage factors". These outrage factors must be considered in determining what level of risk is significant and thus communicated to the public.

### **Why Do Risk Communication?**

The Air Toxics "Hot Spots" Act is one of an increasing number of public "right to know" laws. Giving the public information about the involuntary risks they are exposed to is considered the right thing to do. Risk communication should be used to educate people and help them put risks in perspective. Withholding information makes the magnitude of risk less detectable and increases the level of fear.

Where risk information is withheld or unavailable, environmental groups, consumer groups and labor groups will fill in. Government and industry will lose public trust and credibility and consequently will lose control of the communication process. It is more effective to disseminate honest information at the earliest possible time than to attempt to counter biased or incorrect information later.

### **District Recommendation**

In its Annual Report, the District is recommending that an excess cancer risk of 10 in a million be considered "significant" for the Air Toxics "Hot Spots" Program.

As has been stated, the level recommended as the "significance" level for Air Toxics "Hot Spots" public notification is low compared to other sources of risk. On the surface, it would appear that a 10 in a million increase in the risk of contracting cancer should be of little concern relative to the background cancer risk of 1 in 4. This is absolutely a technically correct statement. But because of the "outrage factors" involved in toxic pollution, risks are perceived by the public as more "significant" and less acceptable than greater risks from other sources which do not produce outrage.

Ideally, considering the actual risks involved, there should be little public concern about a cancer risk of 10 in a million from a facility emitting toxic compounds into the air. There may even be concern that the notification itself could upset people unnecessarily and focus excessive attention on what should be of minor concern. This may be the case. However, we must acknowledge the fears that may arise from notification and use this opportunity to educate and inform the public. An open risk communication process can create public trust and confidence in the communicator.

### **Risk Assessment**

Under the Toxics "Hot Spots" Program, we are concerned with communication of risks which were quantified through the use of risk assessment. The District's 1991 Annual Report includes a brief description of the risk assessment process which was used. A few points should be emphasized here. These health risk assessments produce a worst case estimate of the probability of an adverse health effect occurring.

Many assumptions were made in the course of the health risk assessments. Each assumption biases the risk assessment on the high side. For example, it was assumed that a person would remain at the site of maximum exposure 24 hours a day for 70 years. The upper bound estimates of the toxicity of compounds were used. If air toxic emission rates could not be precisely determined, worst case estimates were used.

Most people in the risk assessment field agree that this type of health risk assessment overstates the magnitude of the risk. Actual risks are probably less than the risk shown by the risk assessments; in some cases, they may be as low as zero.

### **What Levels Have Been Used in Other Regulatory Programs?**

It may be helpful to look at the level of risk which has been considered acceptable in other government regulatory programs. Risk assessment has been used in a number of other cases to determine the appropriate level of control of environmental hazards. Unfortunately, there is no risk level which has been considered generally acceptable under all regulatory programs.

The acceptable level of risk varies depending on the ability to reduce risk, the cost of reducing the risk, uncertainty in the risk estimate, the statutory requirements of different programs, and the type of risk involved.

Much higher levels of risk have been allowed by OSHA in setting workplace standards than by EPA in setting environmental standards. The FDA has allowed higher risks for inadvertent unavoidable environmental contaminants such as aflatoxin in corn and peanuts than for food additives such as artificial colorings. The South Coast Air Quality Management District allows a greater level of risk for new facilities which use

the best available control technology for air toxics than they allow for facilities which do not control emissions to this level.

In determining the level of risk which is considered "significant" and warranting action, consideration has been given to cost, technology and the "outrage" factors.

### **How Will the Significance Level Affect Industry?**

As has been done in other regulatory programs, the costs and effect on industry of the "Hot Spots" program should be balanced against the public "right to know".

District staff is recommending that 10 in a million be used as the "significance" level for the Air Toxics "Hot Spots" Program. Facility operators will be required to notify members of the public if their facility exposes them to an excess cancer risk which is considered "significant". 100 in a million and 1 in a million were also considered as alternative "significance" levels.

In order to examine the effect of the suggested significance level and each of the alternatives, the number of facilities and public notices which would be required at each level was estimated.

An "isopleth map" was required to be submitted with each health risk assessment. An "isopleth map" illustrates the area where excess cancer risks will exceed one in a million, 10 in a million, and 100 in a million.

These isopleth maps were reviewed to estimate how many people would be notified at the suggested significance level of 10 in a million and the alternative levels of 1 and 100 in a million. It should be noted that these estimates were made on preliminary risk assessment results which have not yet been approved by OEHHA or the District. Population figures are rough estimates.

If the significance level is set at 10 in a million, eight facilities would be required to send notices to a total of approximately 136 residences occupied by 446 people. This is also the level at which notices are required under Proposition 65.

If the significance level is set at 100 in a million, two facilities would be required to send approximately one notice each. At this level, virtually no information would be given to the public. Under the voter initiated Proposition 65 program, public notification of risks is required at one-tenth this level. The county and the businesses involved in the program may appear to be withholding information from the public about risks which the public has previously indicated they consider significant.

If the significance level is set at 1 in a million, 18 facilities would be required to send notices to a total of approximately 23,178 residences occupied by 57,263 people. At 1 in a million, a large number of notices would be distributed to the public about small level of risk. The notification may tend to be diluted and lose meaning if it is overused. Facilities which may be of concern will get lost in the midst of so many which are not of concern.

## REFERENCES

- 1) Mark Saperstein, et al., South Coast Air Quality Management District Staff Report on Proposed Rule 1401, New Source Review of Carcinogenic Air Contaminants, April 12, 1990
- 2) David D. Doniger, "Our Lungs Labor in a Chemical Soup", Los Angeles Times, July 9, 1989
- 3) Regulation of Toxic Air Pollutants in California (Review Draft), Leland D. Attaway and Associates, October 1987
- 4) Nelson V. Mossholder, "Understanding the NIMBY Syndrome", Pollution Engineering
- 5) Curtis C. Travis, et al., "Cancer Risk Management: A Review of 132 Federal Regulatory Decisions", Environmental Science and Technology, Vol. 21, No. 5, 1987
- 6) Ortwin Renn, "Risk Communication at the Community Level: European Lessons from the Seveso Directive", Journal of the Air and Waste Management Association, Volume 39, No. 10, October 1989
- 7) Gregory A. Holton, et al., "Addressing Public Fears", Journal of the Air and Waste Management Association, Volume 37, No. 10, October 1987
- 8) Toxic Air Contaminant Reduction Plan (Draft), Bay Area Air Quality Management District, March 1991
- 9) Myron Levin, "Cancer Risk From Plant Emissions May Trigger Notices", Los Angeles Times, June 19, 1991
- 10) Air Toxics Update #3, California Air Resources Board, March 1987
- 11) Julia May, Citizens for a Better Environment, Letter to Janette Brooks, CARB; September 20, 1991
- 12) Edward M. Torres, County Sanitation Districts of Orange County, Letter to Richard Corey, CARB; October 3, 1991
- 13) Frank R. Caponi, County Sanitation Districts of Los Angeles County, Letter to Richard Corey, CARB; October 1, 1991



14) Randy Solaganik, Metal Finishing Association of Southern California, Letter to Janette Brooks, CARB; October 2, 1991

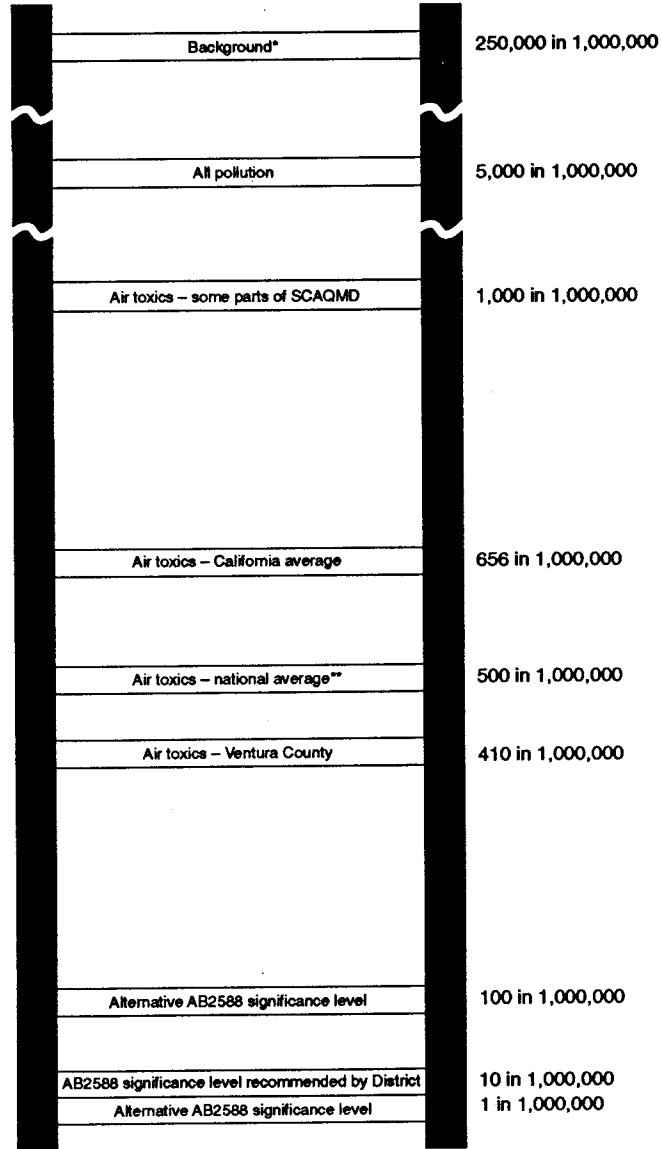
15) Frederick I. Cooper, McLaren Hart, Letter to Richard Corey, CARB; September 20, 1991

16) Workshop on Risk Assessment and Risk Communication, Air Risk Information Support Center, (Tiburon, California), June 13-15, 1989

17) Lee M. Thomas, EPA Letter to Henry A. Waxman, US House of Representatives; May 29, 1987

18) Caron Chess, et al., Improving Dialogue with Communities: A Short Guide for Government Risk Communication, (Environmental Communications Research Program, New Jersey Agricultural Experiment Station, Cook College, Rutgers University), 1988

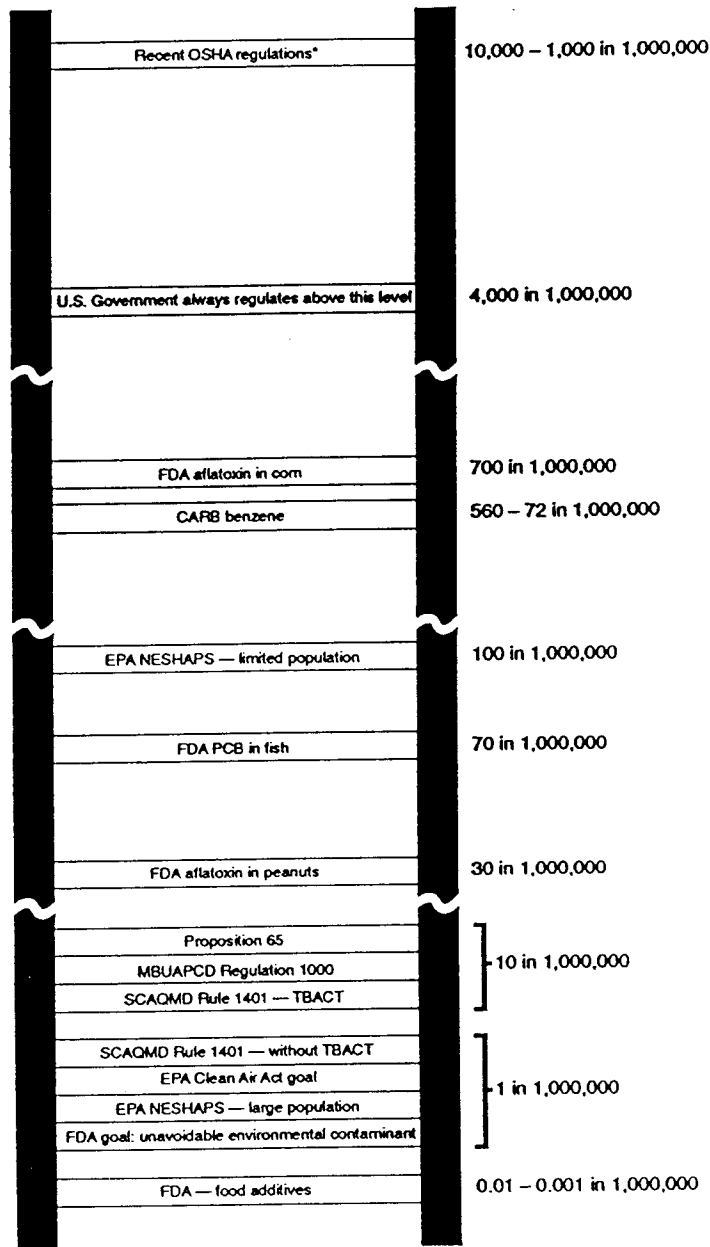
**Cancer Risk Levels**



\* 850,000 cases per year

\*\* 1,500 - 3,000 cases per year

## Cancer Risk Levels Used in Regulatory Programs



\* Note: Risk is to some extent voluntary and exposed persons gain an immediate, direct benefit.

## **A Broader Definition of Risk**

**RISK = Technical Risk Assessment + Non-Technical Public Concerns**

**OR**

**RISK = Hazard + Outrage**

**Source: Adapted from Peter Sandman, Rutgers University.**

## Public Fears and Outrage

Voluntary	←→	Involuntary
Natural	←→	Man Made
Familiar	←→	Exotic
Not Memorable	←→	Memorable
Common	←→	Dread
Chronic	←→	Catastrophic
Controlled by Individual	←→	Controlled by Others
Fair	←→	Unfair
Morally Irrelevant	←→	Morally Relevant
Detectable	←→	Undetectable
Visible Benefits	←→	No Visible Benefits
Trusted Source	←→	Untrusted Source

Source: Paul Slovic, Baruch Fishhoff, and Sarah Lichtenstein.