U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
CENTER FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
CINCINNATI, OHIO 45226

HEALTH HAZARD EVALUATION DETERMINATION REPORT NO. HE 78-35-568

AMERICAN BROADCASTING COMPANIES, INC.
NEW YORK, NEW YORK

March 1979

I. TOXICITY DETERMINATION

The National Institute for Occupational Safety and Health (NIOSH) conducted an environmental and epidemiological evaluation on April 25-27, 1978, for employees engaged in film editing and cleaning operations at the American Broadcasting Companies, Inc., administrative and production facilities located in New York City. Employee exposure to the following airborne contaminants was evaluated: asbestos, 1,1,1-trichloroethane, and 1,1,2-trichloro-1,2,2-trifluoroethane (trichlorotrifluoroethane). It has been determined that during the period of this evaluation, occupational exposure to airborne concentrations of the aforementioned chemical contaminants did not constitute a health hazard, nor did exposure to these chemicals by the film editors, appear to be related to any one specific cancer among the workers. This determination is based on environmental measurements of airborne contaminants, analysis of bulk samples, confidential employee interviews, observations of work practices and engineering controls, and a review of the relevant literature.

II. DISTRIBUTION AND AVAILABILITY OF DETERMINATION REPORT

Copies of this Determination Report are currently available upon request from NIOSH, Division of Technical Services, Information Resources and Dissemination Section, 4676 Columbia Parkway, Cincinnati, Ohio 45226. After 90 days the report will be available through the National Technical Information Service (NTIS), Springfield, Virginia. Information regarding its availability through NTIS can be obtained from NIOSH, Publications Office at the Cincinnati address.

Copies of this report have been sent to:

a) Manager, Accident Prevention and Property Protection, American Broadcasting Companies, Inc., New York, New York.
b) Business Agent, Motion Picture Editors Local 771, New York, New York.
c) President, International Alliance of Theatrical Stage Employees, New York, New York.
d) U.S. Department of Labor - Region II.
e) NIOSH - Region II.

For the purpose of informing the approximately 45 "affected employees", the employer shall promply "post" for a period of 30 calendar days the Determination Report in a prominent place(s) near where the exposed employees work.

III. INTRODUCTION

Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6), authorizes the Secretary of Health, Education, and Welfare, following a written request by any employer or authorized representative of employees, to determine whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found.

The National Institute for Occupational Safety and Health (NIOSH) received such a request from the Business Agent, Motion Picture Editors - Local 771 of the International Alliance of Theatrical Stage Employees. As an authorized employee representative, the Business Agent requested an evaluation be performed at the American Broadcasting Companies, Inc. (ABC), administrative and production facilities located at 7 W. 66th Street, 67 W. 66th Street, and 77 W. 66th Street. The request indicated that employees at these facilities may be exposed to carcinogenic agents in the work environment, and that at least 13 employees have developed cancerous conditions.

An interim SHEFS-I Report, dated April 17, 1978, was distributed to representatives of both management and labor. Discussed in the Report were the observations and preliminary findings of the NIOSH investigators during the initial environmental survey of February 21, 1978; recommendations to help improve the health and safety conditions in the employees work environment were also included. Based on the preliminary findings, a follow-up environmental and epidemiological evaluation was scheduled for the week of April 24, 1978.

IV. HEALTH HAZARD EVALUATION

A. Process Description

The American Broadcasting Companies, Inc. east coast administrative and production facilities have been located in New York City since 1947 and at present, employ approximately 2000 persons. Film editing services have been provided at three locations within the city. Of the total work force, approximately 1000 persons are located in the general area of the request; however, only the film editors and film editing assistants (approximately 45 employees) are directly affected by the alleged hazard.

1. 7 W. 66th Street

Film editing services for the Daily Electronic Feed (DEF) operation are located on the 2nd floor of this multistory building. The DEF operation produces Local News, Network News, and International Television News features which are subsequently transmitted to ABC affiliated stations. Film editing services for the Evening News and the Weekend News are located on the 6th floor of this facility.

The daily routine and amount of film editing required of each editor varies according to the amount of news that has been generated within the last 12-24 hours. The actual number of film editing assignments is not known until midmorning; however, the average number of editing assignments per film editor is 1 or 2 reels of film per day. Although a single reel can hold up to 400 feet of film, the usual length of film to be edited is 100 feet. After the film has been edited, the editor applies Freon TF®*(trichlorotrifluoroethane) solvent with a soft cloth or cotton glove to remove dirt, grease, finger prints, etc. Once the film has been cleaned, a protective coat of wax is applied. It normally takes about 30 seconds to apply the Freon TF® solution (by hand) to the average reel.

2. 67 W. 66th Street

The shipping and receiving departments of the Network Film Service are located on the 1st floor of this facility. Prior to network broadcast, all film is inspected and cleaned. After inspection, the film is cleaned by an ultrasonic film cleaning machine. Two machines are available, the "small machine" is used for all 16 millimeter (mm) film and also for 35 mm film up to 1/2 hour duration. The "large machine" is used exclusively for 35 mm reels. The machines utilize 1,1,1-trichloroethane as the cleaning solvent and both are equipped with local exhaust ventilation and a solvent recovery unit. The operator loads the film in approximately 1-2 minutes and leaves the film cleaning room after set-up. The film is run through the machine at twice the normal projection speed (i.e. - a 1 hour reel requires approximately 30 minutes to clean). The operator spends approximately 1 hour per day in the film cleaning room.

*Mention of a commercial product does not constitute endorsement by the National Institute for Occupational Safety and Health.

During the initial and follow-up surveys, extremely high noise levels were encountered by the NIOSH industrial hygienists in the vicinity of the ultrasonic bulk film cleaning machines. Although no sound level measurements were taken during the initial survey, subjective evaluation indicated the noise level was approaching the threshold of pain. The noise level was most intense at the rear of the film cleaning machines, near the chemical storage area. It should be noted that this film cleaning operation is physically isolated from the shipping and receiving area. The control operator is stationed in the receiving area and utilizes personal hearing protection (ear-muffs) when it is necessary to enter the film cleaning room. However, no warning signs were observed in the immediate area to indicate that high noise levels would be encountered within the film cleaning room.

3. 77 W. 66th Street

Editing rooms for the WABC Film Service are located on 2 floors of this 3 level facility. The basement contains editing facilities for news features and short specials; however, film is not cleaned in this area. The 2nd floor contains several editing rooms and a small utrasonic film cleaning machine. After editing, the film is either cleaned in the ultersonic cleaner with 1,1,1-trichloroethane or by hand with Freon TF®. The ultrasonic film cleaner is equipped with local exhaust ventilation but does not have a solvent recovery unit. Each film editor spends on the average, 5-10 minutes per day cleaning film.

B. Evaluation Design and Progress

In response to this request, an initial screening survey was conducted on February 21, 1978, at the three ABC facilities previously identified. An opening conference was conducted and was attended by representatives of both management and labor. Following the opening conference, a walk-through survey was performed and a sample of Freon TF® was obtained for subsequent laboratory analysis. A sample of the ceiling tile at 7 W. 66th Street was also obtained for analysis of asbestos fiber content. Direct reading detector tubes were utilized for screening purposes to evaluate the concentration of 1,1,1-trichloroethane in the vicinity of the ultrasonic film cleaning machine located at 77 W. 66th Street.

On April 25-27, 1978, a follow-up environmental and epidemiological evaluation was conducted at 7 W., 67 W. and 77 W. 66th Street for 1,1,1-trichloroethane and trichlorotrifluoroethane.

C. Evaluation Methods

1. Environmental

Environmental sampling was conducted on April 26-27, 1978. Employee exposure to solvent vapors were measured via area air samples which were collected during the 10:00 am - 6:00 pm shift at the locations previously identified.

Employee exposure to 1,1,1-trichloroethane and trichlorotrifluoroethane was evaluated by absorbing the solvent vapors onto activated charcoal media contained in glass sampling tubes (charcoal tubes). Vacuum sampling pumps were utilized to draw air through the charcoal tubes at a flow rate of 50 milliliters per minute for area samples, and at 50 or 200 milliliters per minute for ceiling (15 minute duration) samples. Area air samples were transmitted to a NIOSH contract laboratory in Salt Lake City and were analyzed by gas chromatography and mass spectrometry.

2. Epidemiological

A trip was made to the American Broadcasting Companies, Inc., 1330 Avenue of the Americas, New York City on April 27th, 1978. In the request, 13 employees of ABC were noted as having cancerous conditions. Meetings were held with the following ABC officials: the Corporate Physician; Manager, Accident Prevention and Property Protection; and the Vice-President of Personnel. The purpose of the meetings with the NIOSH epidemiologist was to (1) determine the feasibility of conducting a mortality study with the company's existing records, and (2) determine the need for further, more in-depth epidemiologic investigation into the alledged problem.

The Corporate Physician was requested to confirm the 13 cases of cancer indicated on the requestor's letter. Of the 13 cases, the physician had received confirmation on 7 cases through contact with the personal physicians of the employees. He had no medical information on the other 6 cases and suggested that the other cases had either been terminated before death or diagnosis of the illness, or as in one case, had never worked at ABC.

According to the Corporate Physician, medical records of active employees are kept at 1330 Avenue of the Americas, while those of terminated and deceased employees are removed to a warehouse in Hackensack, New Jersey.

Personnel records are retained intact for 6 years past termination or death and then completely destroyed. Although the company "ABC" was formally organized in 1953, the personnel department has been functioning as it presently does for approximately 3-5 years.

D. Evaluation Criteria

The concept that there are concentrations of air contaminants to which most employees may be exposed on a day-to-day basis, without discomfort or adverse health effects, is fundamental to the practice of industrial hygiene. Airborne exposure limits for many chemical substances encountered occupationally have been recommended or promulgated by several organizations. These limits are normally expressed as a time-weighted average and are presumed to be valid throughout a normal working lifetime. However, it should be noted, that due to a wide variation in individual susceptibility, a small percentage of employees may experience

discomfort from exposure to some substances at concentrations at or below the recommended level; a smaller percentage may be affected more seriously by aggravation of a pre-existing condition or by development of an occupational illness.

For this investigation, environmental evaluation criteria were considered from the following sources: (1) NIOSH Criteria Documents with recommended occupational exposure standards, (2) American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) with their supporting documentation, and (3) U.S. Department of Labor - Occupational Safety and Health Administration (OSHA) standards. For the chemical substances evaluated during this investigation, the primary environmental criteria selected were:

Chemical Substance	Environmental Criteria PPM**	Reference Source ***
1,1,1-Trichloroethane	350*	(1)
Trichlorotrifluoroethane	1000	(2,3)

*This concentration is ceiling value and as such, should never be exceeded.
**Parts of vapor per million parts of contaminated air by volume at 25°C and 760 mmHg.
***Reference numbers in parentheses refer to the source(s) from the above discussion from which the environmental standard was obtained.

Environmental air sampling, during film editing and cleaning operations has identified the presence of 1,1,1-trichloroethane and trichlorotrifluoroethane in the work area. The following discussion is provided so that the employees may better understand the potential health hazards associated with excessive occupational exposure to these chemical substances.

1,1,1-Trichloroethane - is a colorless, nonflammable, aromatic liquid with an odor similar to chloroform. It closely resembles carbon tetrachloride in its solvent action and evaporation rate; however, it is much less toxic. The primary routes of absorption are from inhalation of the vapor and direct skin contact. Exposure to 1,1,1-trichloroethane liquid and vapor is irritating to the eyes and repeated skin contact may produce a dry, scaly, and fissured dermatitis, due to the solvent's defatting properties. In high concentrations, the solvent acts as a narcotic and depresses the central nervous system (CNS). Acute exposure symptoms include dizziness, incoordination, drowsiness, increased reaction time, unconsciousness, and in some instances death. NIOSH defines "occupational exposure" to 1,1,1-trichloroethane as exposure above 200 ppm measured as a time-weighted average (TWA) for up to a 10 hour workday, or 40 hour workweek. NIOSH recommends that occupational exposure be controlled so that no worker is exposed to 1,1,1-trichloroethane at greater than a ceiling concentration of 350 ppm as determined by a 15 minute sampling period. The recommended ceiling limit should protect workers from acute irritation, CNS effects, chronic effects and will assure a safe TWA.[1,2]

The environmental criteria recommended by the ACGIH (1978) is a TLV of 350 ppm as determined by an 8 hour TWA exposure, and a Short Term Exposure Limit (STEL) of 450 ppm. The STEL is a maximum allowable concentration, or ceiling value which may not be exceeded during a 15 minute exculsion period.[3,4] The present Federal Standard, as promulgated by OSHA, is 350 ppm as an 8 hour TWA.[5]

Trichlorotrifluoroethane - is a nonflammable, colorless, liquid of relatively low toxicity. Its selective solvent action permits its use in removal of oil, grease, and dirt from objects without harm to metal, plastic, or elastomeric materials. The primary route of absorption is by inhalation of the vapor. Exposure to high concentrations (>1500 ppm) may produce mild irritation of the upper respiratory tract and mild CNS depression. Dermatitis occurs only rarely. The environmental criteria recommended by the ACGIH (1978) is a TLV of 1000 ppm, and a STEL of 1250 ppm.[2,3,4] The present Federal Standard, as promulgated by OSHA, is also 1000 ppm as an 8 hour TWA.[5]

When two or more hazardous substances are present, their combined effect, rather than that of either substance individually, should be given careful consideration. In the absence of information to the contrary, the effects of the different hazards should be considered as additive. The sum of the fractions of the measured atmospheric concentration of contaminant over the corresponding threshold limit value (C_1/T_1 + C_2/T_2 ..... C_n/T_n) should not exceed unity. Exceptions to this rule should be made only when there is a good reason to believe that the toxicological properties of the chemical substances are not in fact additive, but independent.[3] Therefore, CNS depressants such as 1,1,1-trichloroethane and trichlorotrifluoroethane, are included in this relationship.

E. Evaluation Results and Discussion

1. Environmental

Qualitative analysis of the ceiling tile sample obtained during the initial survey revealed the presence of rather large (5-30 micron diameter) prismatic fibers in the sample. The ceiling tile was analyzed by electron microscopy and X-ray diffraction. The analysis indicated that the tile sample is primarily of calcium-silicate composition and the most probable identification is wollastonite. No asbestos fibers were detected. Wollastonite, a natural calcium-silicate, is a fairly common pyroxene mineral found in many metamosphosed limestones and is used in the manufacture of tiles.

Qualitative analysis of the DuPont Freon TF® sample obtained during the initial survey by gas chromatography and mass spectrometry (GC/MS) has indicated one very large peak and several very small peaks. The major peak was identified by GC/MS as 1,1,2-trichloro-1,2,2-trifluoroethane and its purity was estimated at greater than 99% based on the gas chromatographic computer data output. The GC/MS did not show any of the smaller peaks.

The direct reading detector tube samples taken in the vicinity of the ultrasonic film cleaner at 77 W. 66th Street during the initial survey indicated a 1,1,1-trichloroethane concentration of under 100 ppm. As previously reported in the SHEFS I Report of April 17, 1978, based on the aforementioned observations, a health hazard to employees working in this area from 1,1,1-trichloroethane was not anticipated.

Quantitative analysis of the charcoal tube samples collected during the follow-up investigation, by gas chromatography according to NIOSH method #127, for 1,1,1-trichloroethane and trichlorotrifluoroethane, indicated a "combined exposure" of less than unity and are thus, not considered to constitute a health hazard during the period of this evaluation.[6] Results for the charcoal tube samples collected at 7 W., 67 W., and 77 W. 66th Street are shown in Tables I, II, and III, respectively.

A total of sixteen employees were privately interviewed during the follow-up survey. Six employees at 7 W. 66th Street were interviewed and of these, none reported work related health problems; however, two cases of skin cancer and one case of bronchitis were reported. The average age and length of employment for these employees, at ABC or other companies in similar operations, was 42.3 years (range: 30-51) and 20.3 years (range: 10-27), respectively. Five employees were interviewed at 67 W. 66th Street and two of these employees reported the following symptoms when operating the ultrasonic film cleaning machines: headache, light-headedness, loss of balance, and a ringing in the ears. The average age and length of employment for these employees is 25.4 years (range: 21-28) and 2.5 years (range: 1-7.5), respectively. Five employees were interviewed at 77 W. 66th Street and of these, four employees reported eye, nose, and throat irritation while loading and unloading the ultrasonic film cleaning machine, as well as drying or defatting of skin when cleaning film by hand. For these five employees, their average age and length of employment is 35.6 years (range: 22-49) and 8 years (range: 3 days-27 years), respectively.

2. Epidemiological

The confirmed cases of cancer, as reported by the Corporate Physician, are listed in Table IV. Of the 7 cases, 3 were fatal and the others were successfully treated without recurrence.

The types of cancer affecting these people are not uncommon among the U.S. population. Also, there appears to be no extraordinary repetition or obvious trends in the occurrence of any one type of carcinoma in this group.

Finally, it must be understood that the requestor's list of 13 cancer cases is neither an unbiased nor complete list of cancer cases that could have occurred in the entire corporation. It was assembled from memory by one employee in the film editing area. In one instance, a reported cancer case was a fruit vender who worked outside the building on the sidewalk.

Therefore, an epidemiological investigation of this group is unfeasible and should not be considered. As previously stated, the personnel records are only kept for six years after death or termination of an ABC employee. This poses a problem as it is usually the case in occupationally induced cancers, that the employee must have experienced either a long duration of exposure to a substance, or a long latency (occurring 10-30 years after exposure) or both. In order to locate those employees who worked in high risk areas, and to determine their length of employment and duration of exposure to the toxic substances, it is necessary to have a well detailed work history of the employees. It is also necessary to obtain a complete demographic description of each employee (e.g., age, date of birth, date of death, etc.) working at the company during a specified period.

As the records which contain the required work-related and personal information are only kept for less than 10 years, there is no way to determine the type and frequency of exposures on past employees, including two of the three terminal cancer cases. In addition, since these records are destroyed after the six year retention time, there is no complete documentation on past employees, thus precluding any follow-up of an entire cohort of employees at the American Broadcasting Corporation.

F. Conclusion and Recommendations

Through analysis of the data obtained from environmental sampling and worker interviews indicate that health hazard from 1,1,1-trichloroethane and/or trichlorotrifluoroethane to employees in the various film editing departments, did not exist during the period of this evaluation. The following recommendations are made to help improve the health and safety conditions in the employees work environment:

(a) Receiving Area - Bulk Film Cleaning Operation (67 W. 66th Street)

1. Because of the high noise levels encountered, warning signs should be posted at the entrance to the film cleaning room and in the receiving area. All personnel entering this area should be supplied with, and required to wear, ear-muff type personal protective equipment. Engineering control methods should be implemented to reduce the noise level. A screening survey conducted during the follow-up evaluation indicated approximately 92-94 dBA in front of the film cleaners and approximately 99-100 dBA near the solvent recovery unit.

2. A bulk chemical storage area is located adjacent to the film cleaning room. In the event of a major chemical spill, emergency personal protective equipment should be available. This equipment should include as a minimum: impervious gloves and full-face respirators. Additionally, when a chemical spill occurs, the resulting vapor concentration is normally unknown.

Therefore, for entry or escape from unknown vapor concentrations, a self-contained breathing apparatus (SCBA) with a full-face piece and operated in a positive pressure mode, should be available. As an alternative, a type-C supplied air respirator with a full-face piece, operated in a positive pressure mode, and equipped with an auxiliary SCBA can also be used. Employees should be adequately trained in the operation, maintenance and limitations of the respirator, and they should be informed of the hazards and toxic properties associated with each chemical in the storage area. All personal protective equipment should be stored in a location which is readily accessable and will not become contaminated in the event of a chemical spill.

3. The operator should be provided with, and required to use, chemical safety goggles and impervious gloves when cleaning the ultrasonic film cleaners.

(b) Film Cleaning Machine (77 W. 66th Street)

1. Chemicals were stored in unmarked and unapproved containers. Bulk chemicals should only be stored in approved containers and should be clearly labeled.

2. The operator should be provided with, and required to use, chemical safety goggles and impervious gloves when filling the machine.

3. Excessive dust build-up was observed on the local exhaust hoods. These hoods should be kept clean and free of dust build-up to maintain original design specifications and efficiency.

4. The exhaust ventilation switch for the ultrasonic cleaner should be reconnected so that the exhaust ventilation system is operational when the room light is turned-on. This will ensure that the ventilation system is operating when employees are present in the room.

5. The odor of 1,1,1-trichloroethane was detected several times in editing rooms 3 and 4 while the ultrasonic cleaner was operating. The room air conditioning system should be inspected for possible cross contamination with the film cleaners exhaust ventilation system.

The NIOSH staff would like to thank both management and labor for their cooperation and assistance during this evaluation.

V. REFERENCES

1. Criteria for a Recommended Standard . . . Occupational Exposure to 1,1,1-trichloroethane, U.S. Department of Health, Education, and Welfare, PHS, CDC, NIOSH, July 1976, DHEW (NIOSH) Publication No. 76-184.

2. Occupational Diseases - A Guide to Their Recognition, U.S. Department of Health, Education, and Welfare, PHS, CDC, NIOSH, June 1977, DHEW (NIOSH) Publication No. 77-181.

3. Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes for 1978, American Conference of Governmental Industrial Hygienists, Cincinnati, Ohio, 1978.

4. American Conference of Governmental Industrial Hygienists: Documentation of the Threshold Limit Values for Substances in the Workroom Air, Third Edition, Cincinnati, Ohio, 1978.

5. U.S. Department of Labor, Occupational Safety and Health Administration, 29 CFR 1910.1000, January 1, 1978.

6. Organic Solvents in Air - P & CAM 127, NIOSH Manual of Analytical Methods, Second Edition - Volume 1, DHEW (NIOSH) Publication No. 77-157-A, Cincinnati, Ohio, 1977.

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Table I

Results of Area Air Sampling for Exposure to Organic Vapors

American Broadcasting Companies, Inc.

DEF and Evening - Weekend News
7 West 66th Street
New York, New York

April 26-27, 1978

HE 78-35

Time Weighted Average Exposures In PPM[1]

SAMPLE NUMBER	DESCRIPTION/LOCATION	TIME	VOLUME (LITERS)	1,1,1-TRICHLORO-ETHANE	TRICHLOROTRIFLUORO-ETHANE	COMBINED EXPOSURE
1	Film Editing Room - 6th Floor	1100 - 1700	14.68	0.89	11.56	0.01
2	Film Editing Room - 2nd Floor	1200 - 1700	12.60	ND[2]	12.43	-
3	Film Editing Room - 2nd Floor	1200 - 1700	13.85	ND	12.25	-
4	Film Editing Room - 6th Floor	1245 - 1300	0.07[3]	193.77[3]	1864.29[3]	2.42[3]
5	Film Editing Room - 6th Floor	1245 - 1700	13.05	3.99	26.00	0.04
6	Film Editing Room - 6th Floor	1245 - 1700	13.31	1.47	11.77	0.02
7	Film Editing Room - 6th Floor	1500 - 1530	0.13[3]	19.74[3]	341.31[3]	0.40[3]
8	Film Editing Room - 2nd Floor	1530 - 1545	0.59	ND	442.37	-
9	Film Editing Room - 6th Floor	1600 - 1615	1.43	34.35	228.15	0.33
10	Film Editing Room - 2nd Floor	1600 - 1630	0.64	ND	ND	-
11	Blank	- - -	-	ND	ND	-
101	Film Editing Room - 2nd Floor	1130 - 1230	13.77	ND	19.90	-
102	Film Editing Room - 2nd Floor	1530 - 1600	5.41	ND	137.50	-
103	Blank	- - -	-	ND	ND	-
104	Film Editing Room - 2nd Floor	1550 - 1630	3.99	ND	124.29	-
105	Film Editing Room - 2nd Floor	1545 - 1615	3.24	ND	153.06	-
106	Film Editing Room - 6th Floor	1345 - 1400	3.18	185.03	123.11	0.65
107	Film Editing Room - 6th Floor	1445 - 1500	1.90	127.35	226.66	0.59
	ENVIRONMENTAL CRITERIA			350 (ceiling)	1000	1.0

(1) Parts of vapor per million parts of contaminated air by volume at 25°C and 760 mm Hg.
(2) ND - none detected, less than the lower limit of detection of 0.01 mg of trichlorotrifluoroethane and 0.002 mg of 1,1,1-trichloroethane per sample
(3) Vacuum pump malfunctioned - results invalid

Table II

Results of Area Air Sampling For Exposure to Organic Vapors

American Broadcasting Companies, Inc.

Network Film Service - Shipping and Receiving Department
67 West 66th Street
New York, New York

April 26-27, 1978

HE 78-35

Time Weighted Average Exposures In PPM[1]

SAMPLE NUMBER	DESCRIPTION/LOCATION	TIME	VOLUME (LITERS)	1,1,1-TRICHLORO-ETHANE	TRICHLOROTRIFLUORO-ETHANE	COMBINE EXPOSUR
21	Bulk Film Cleaning	1024 - 1424	11.36	63.09	ND	-
22	Bulk Film Cleaning	1024 - 1424	13.17	125.40	ND	-
23	Chemical Storage Room	1026 - 1426	10.37	7.25	ND	-
24	Bulk Film Cleaning - Ceiling	1222 - 1237	0.68	100.55	49.90	0.34
25	Bulk Film Cleaning - Ceiling	1222 - 1237	0.92	160.59	21.28	0.48
26	Work Table - Office Area	1041 - 1441	13.33	1.77	ND	-
27	Bulk Film Cleaning - Ceiling	1303 - 1318	0.69	189.14	51.07	0.59
28	Bulk Film Cleaning - Ceiling	1303 - 1318	1.09	140.08	33.52	0.43
29	Bulk Film Cleaning - Ceiling	1653 - 1707	0.68	152.30	ND	-
30	Bulk Film Cleaning - Ceiling	1653 - 1707	0.90	242.36	ND	-
31	Bulk Film Cleaning	1510 - 1800	7.79	24.00	ND	-
32	Bulk Film Cleaning	1510 - 1800	8.85	44.32	ND	-
33	Chemical Storage Room	1510 - 1800	7.24	4.43	ND	-
34	Work Table - Office Area	1512 - 1800	8.48	1.62	ND	-
35	Blank	- - -	-	ND[2]	ND	-
121	Bulk Film Cleaning	1030 - 1500	12.36	5.25	ND	-
122	Bulk Film Cleaning	1030 - 1500	11.09	7.01	ND	-
123	Chemical Store Room	1030 - 1500	13.79	1.79	ND	-
124	Work Table - Office Area	1030 - 1500	11.67	0.60	ND	-
125	Bulk Film Cleaning - Ceiling	1713 - 1728	3.11	97.84	ND	-
126	Bulk Film Cleaning - Ceiling	1713 - 1728	2.83	406.76	ND	-
127	Blank	- - -	-	ND	ND	-
	ENVIRONMENTAL CRITERIA			350 (ceiling)	1000	1.0

(1) Parts of vapor per million parts of contaminated air by volume at 25°C and 760 mm Hg.

(2) ND - none detected, less than the lower limit of detection of 0.01 mg of trichlorotrifluoroethane and 0.002 mg of 1,1,1-trichloroethane per sample

Table III

Results of Area Air Sampling for Exposure to Organic Vapors

American Broadcasting Companies, Inc.

WABC Film Editing Service
77 West 66th Street
New York, New York

April 26-27, 1978

HE 78-35

Time Weighted Average Exposures In PPM[1]

SAMPLE NUMBER	DESCRIPTION/LOCATION	TIME	VOLUME (LITERS)	1,1,1-TRICHLORO-ETHANE	TRICHLOROTRIFLUORO ETHANE	COMBINEI EXPOSURI
41	Bulk Film Cleaning	1010 - 1755	21.06	15.75	5.08	0.05
42	Program Editing - Room 7	1015 - 1720	18.36	3.46	6.40	0.02
43	Program Editing - Room 5	1015 - 1720	17.67	3.61	24.37	0.03
44	Program Editing - Room 4	1020 - 1610	20.03	7.67	16.29	0.04
45	Program Editing - Room 3	1025 - 1720	29.36	10.93	4.36	0.04
46	Program Editing - Room 1	1030 - 1720	20.81	3.39	17.56	0.03
47	Program Editing - Room 6	1135 - 1755	18.00	1.46	4.64	0.01
48	Bulk Film Cleaning - Ceiling	1555 - 1610	3.38	3.15	16.99	0.03
49	Bulk Film Cleaning - Ceiling	1555 - 1610	1.33	4.41	18.64	0.03
50	Blank	- - -	-	ND[2]	ND	-
51	Bulk Film Cleaning-Filling Contain Containers - Ceiling	1610 - 1625	2.94	277.44	14.65	0.81
141	Program Editing - Room 1	1020 - 1710	17.11	12.00	19.07	0.05
142	Program Editing - Room 7	1010 - 1730	21.00	10.21	3.85	0.03
143	Program Editing - Room 5	1050 - 1710	16.16	11.04	13.73	0.05
144	Program Editing - Room 6	1130 - 1715	19.22	8.50	3.46	0.03
145	Program Editing - Room 4	1050 - 1710	26.59	17.51	3.29	0.05
146	Program Editing - Room 3	1015 - 1710	18.49	23.00	4.16	0.07
147	Bulk Film Cleaning	1100 - 1705	16.37	40.09	4.15	0.12
148	Bulk Film Cleaning - Ceiling	1310 - 1325	2.22	56.72	19.99	0.18
149	Bulk Film Cleaning - Ceiling	1330 - 1345	2.95	82.64	10.62	0.25
150	Blank	- - -	-	ND	ND	-
151	Blank	- - -	-	ND	ND	-
152	Bulk Film Cleaning - Ceiling	1410 - 1425	2.92	63.40	10.28	0.19
153	Bulk Film Cleaning - Ceiling	1426 - 1441	3.32	96.07	21.62	0.30
	ENVIRONMENTAL CRITERIA			350 (ceiling)	1000	1.0

(1) Parts of vapor per million parts of contaminated air by volume at 25°C and 760 mm Hg.

(2) ND - none detected, less than the lower limit of detection of 0.01 mg of trichlorotrifluoroethane and 0.002 mg of 1,1,1-trichloroethane per sample

Table IV

Malignancies Among Employees at ABC:
Confirmed by the Corporate Physician

American Broadcasting Companies, Inc.
1330 Avenue of the Americas
New York, New York

April 27, 1978

HE 78-35

	OCCUPATION	SEX	DIAGNOSIS	DATE OF DIAGNOSIS	DATE OF DEATH	MEDICAL ACTION TAKEN
1.	Sound Engineer	M	Esophageol CA	1973	1975	-
2.	Director	F	Breast CA	1966	1971	-
3.	Film Editor	M	Rectal CA	1977	1977	-
4.	Film Editor	M	Testicular CA	1968	-	Resected without recurrence
5.	Film Editor	M	Malignant Melanoma	1974	-	On back; resected without recurrence
6.	Film Editor	M	Basal Cell CA	1973	-	On face; due to long term exposure to sunlight; resected 1973 without recurrenc
7.	Receptionist	F	Basal Cell CA	?	-	Resected without recurrence