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. 79-32-569

WESTERN ELECTRIC
BALLWIN, MISSOURI 63011

MARCH 1979

I. TOXICITY DETERMINATION

An authorized representative of employees requested a health hazard evaluation of the System Equipment Engineering Department because many employees were complaining of health problems such as "sore throats, sinus, coughing, etc." which were reportedly due to excessive smoke from cigarette smoking. A limited health hazard evaluation survey was conducted by the National Institute for Occupational Safety and Health (NIOSH) on January 16, 1979.

Environmental samples were obtained for oxides of nitrogen, nitrogen dioxide, ammonia, formaldehyde, hydrogen sulfide, ozone, carbon dioxide, and carbon monoxide. The only positive results were for carbon monoxide (CO) at a maximum of 8 ppm (parts of CO per million parts of air) and for carbon dioxide (CO_2) at a maximum of 1,000 ppm. These results are 25 percent or less of the environmental health criteria of 35 ppm for CO and 5,000 ppm for CO_2 for occupational exposures. Medical questionnaires were handed out to approximately 80 employees to ascertain what complaints or symptomatology they may have which may be attributed to the work environment. In addition, a few employees verbally complained about the excess smoke to the NIOSH investigator during the course of the survey. A total of 66 employees returned the questionnaire to the NIOSH investigator. Twenty-four (24) of the responding employees or 36 percent of the employees had complaints of eye strain, irritation of respiratory tract, smoke odors and stuffy air. These complaints were for the most part not an everyday occurrence but rather occasional complaints which occur during the week under varying environmental conditions such as extreme outside temperature conditions. The NIOSH investigator feels that the percentage of complaints is not unusual and there were only a few complaints of the working environment on the day of the survey. Therefore, a health hazard to employees was judged not to exist at the time of the survey. However, a few employees were found with health conditions such as allergies, respiratory problems, and angina pectoris which would make these employees more susceptible to environmental conditions which were found or may be found at this facility. Therefore, environmental conditions may upon occasion be potentially toxic for those employees who may be more sensitive to environmental conditions.

Detailed information concerning the above statements plus pertinent observations and other items are contained in the body of this report. Some recommendations are included in this report which are designed to assist those employees who may be more susceptible than other employees to adverse effects from exposure to various environmental conditions which may exist due to smoking.

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) Western Electric Company
b) Authorized Representative of Communication Workers of America, Local No. 6396
c) Authorized Representative of Employees
d) U.S. Department of Labor - Region VII
e) NIOSH - Region VII

For the purpose of informing the approximately 600 "affected employees", the employer shall promptly "post" for a period of thirty calendar days, this Determination Report in a prominent place(s) near where 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 an 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 received such a request from an authorized representative of employees regarding worker exposure to various chemicals emanating from smoking which results in employees complaining of irritation of throats, sinus, and coughing.

IV. HEALTH HAZARD EVALUATION

A. Description of Process

The portion of the System Equipment Engineering Department covered by this evaluation involves around 600 employees located on the second floor of the main building in an area estimated as 79,200 square feet (330 feet x 240 feet). Most of the area was partitioned (i.e., five foot or six foot high partitions) into sub-areas of various working units and some enclosed offices. The employees are primarily engineers, draftsmen and technicians who design various communication sub-systems for use in the overall system. This work is tedious, technical in nature, sedentary, exacting, and by nature may include some stresses due to work load and time contraints. Exposure of employees to specific chemicals (e.g., toner solutions in reproduction machines, drafting compounds, etc.) used in the workplace was very limited and not considered to be a hazard due to the limited amounts used and length of exposure. The only identifiable common exposure of employees to airborne concentrations of various contaminants which may arise in the working environment is from smoking of cigarettes, cigars, and pipes or from other combustion products (e.g., autos, forklifts, etc.) from inside or outside the facility.

B. Evaluation Progress and Methods

1. Progress

A limited health hazard evaluation survey was conducted on January 16, 1979. The survey included an initial walk-through survey with subsequent emphasis on environmental-medical aspects which may arise from smoking in the area covered by the request. Available detector tube samples for various contaminants were obtained at various locations throughout the facility, and completed questionnaires from employees were obtained during the survey. Both union and management representatives were available during the survey and at the exit interview to discuss any preliminary observations and findings and to ask any questions concerning this evaluation and subsequent reports.

2. Environmental Design and Methods

Several detector tube samples (using Bendix, MSA or Draeger pumps with appropriate tubes) were obtained at the recirculated air intake of the four ventilation systems (any airborne contaminants should be detected at these points if there is a problem from the contaminants) for oxides of nitrogen, nitrogen dioxide, ammonia, formaldehyde, hydrogen sulfide, ozone, carbon dioxide and carbon monoxide. Carbon dioxide and carbon monoxide concentrations were positive and are discussed further in this report. However, the other compounds were not detected at the time of the survey and are not considered as toxic from an inhalation standpoint. Therefore, oxides of nitrogen, nitrogen dioxide, ammonia, formaldehyde, hydrogen sulfide and ozone are not discussed further in this report.

A few samples were also collected at the recirculated air intake of the ventilation systems by absorbing vapors onto charcoal contained in glass sampling tubes at a sampling rate of 0.2 liters per minute using a Sipin pump. The NIOSH investigator decided not to submit these samples for analysis because it was subsequently determined there was not sufficient use of various specific chemicals (e.g., toner solution, mineral spirits, etc.) to warrant the expense of analysis of these samples.

The main thrust of the environmental design and methods show that the main consideration from this limited evaluation is from the carbon monoxide and carbon dioxide concentrations which may be due in part to the smoking of cigarettes, cigars, and pipes, as well as other environmental conditions such as outside and inside usage of cars, trucks, and forklifts plus the recirculation of air. Therefore, detector tube samples for carbon monoxide and carbon dioxide were obtained throughout the working areas covered by this evaluation.

3. Medical Design and Methods

A general questionnaire was passed out to approximately 80 employees to elicit any complaints or symptomatology which may be attributed to the working environment. The results of the 66 questionnaires received by the NIOSH investigator are discussed further in this report but the reader is cautioned that the questionnaire is (a) directed towards the use of toxic chemicals, and (b) the interpretation and answers are not objective (as is the case in environmental results) but rather subjective analysis of the received information on the questionnaires by the NIOSH investigator.

C. Evaluation Criteria

The three primary sources of environmental evaluation criteria considered in this report are: (a) NIOSH Criteria Documents with recommended standards for occupational exposure; (b) American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV's) with supporting documentation; and (c) Federal Occupational Health Standards as promulgated by the Occupational Safety and Health Administration (OSHA), U.S. Department of Labor (29 CFR 1910.1000). For the substances evaluated during this study, the primary environmental criteria considered most appropriate are:

TABLE OF ENVIRONMENTAL CRITERIA

SUBSTANCE	STANDARD OR GUIDE ppm*
Carbon monoxide (CO)	35 ppm (a)**
Carbon dioxide (CO_2)	5,000 ppm (b)

*ppm parts of vapor or gas per million parts of air by volume.

**Reference letters in parentheses refer to the source(s) from the above discussion from which the standard or guide was obtained.

Occupational health exposure limits for individual substances are generally established at levels intended to protect workers occupationally exposed during an 8 or 10 hour work day, 40 hour work week, over a normal working lifetime. The above standards are for occupational exposure of employees to CO and CO_2. However it should be noted that the current "ambient air" criteria or standard for CO is 9 ppm[1] which was established by the Environmental Protection Agency. The "ambient air" criteria of 9 ppm may be more applicable to cigarette smoke than the occupational criteria of 35 ppm for CO. There is no "ambient air" criteria for CO_2, although carbon dioxide is a normal constituent of the atmosphere being found at 300 ppm dry air at sea level.

D. Evaluation Toxicology[2,3,4,5]

The effects of smoking on the smoker have been extensively studied, but the effects of tobacco smoke on the "involuntary smoker" or non-smoker have received less attention. "Chapter 4 - Involuntary Smoking" from DHEW Publication No. (CDC) 76-870 "The Health Consequences of Smoking" discusses the constituents of tobacco smoke, effects of exposure to cigarette smoke and a summary of involuntary smoking findings. References 4 and 5 of this report also contain good resource materials on the effects of smoking and are readily available at most public libraries. Copies of these and other publications are available from the Office of Smoking and Health, 12420 Parklawn Drive, Rockville, Maryland 20857 (phone 301-443-1575). The effects of exposure to CO and CO_2 are discussed below.

Carbon monoxide (CO) -- The acute effects resulting from exposure to concentrations of CO are well defined. Because CO is an odorless gas, the sense of smell does not help in detecting its presence. Early acute symptoms, such as headache, fatigue, dizziness, and visual acuity are noted after several hours of exposure to 50 to 100 ppm of CO. Variation of individual susceptibility is great, and environmental factors, (e.g., work load, altitude, etc.) are also important aspects. The main effect of CO exposure is its effect in lowering the oxygen-carrying capacity of blood. Employee exposure to CO at less than 35 ppm will prevent acute CO poisoning and provide protection from adverse behavioral manifestations and symptomatology from exposure to low levels of CO.

Carbon dioxide (CO_2) -- The most outstanding effect of carbon dioxide is to stimulate the respiratory system. Stimulation is pronounced at 5% (50,000 ppm) concentration of CO_2. The gas is weakly narcotic at 30,000 ppm[6] giving decreasing acuity of hearing and increasing blood pressure and pulse. Flury and Zernick[7] quote Lehman-Hese that 5,500 ppm of CO_2 for six hours causes no noticeable symptoms.

E. Evaluation Results

Several detector tube samples were obtained at the intakes of the four return air ventilation systems as well as various locations throughout work areas in the facility. The results for carbon monoxide varied from 5 ppm to a maximum of 8 ppm which is less than 25 percent of the environmental criteria of 35 ppm of CO as an occupational exposure. The levels of CO found in the working areas were also less than the criteria of 9 ppm for the outside ambient air. The results for carbon dioxide varied from 500 to 1,000 ppm which is less than the environmental criteria of 5,000 ppm for CO_2. The Environmental Protection Agency has not established any criteria for outside ambient air concentrations for CO_2.

A cursory survey was made of the ventilation system. There are four ventilation units servicing the area covered by this evaluation as well as a few other areas not covered by this evaluation. The units furnish 67,500 cubic feet of air per minute and provide for an estimated 2.5 air changes per hour. The air velocity at the intakes for the return air had a flow rate of 600 to 800 feet per minute (fpm). The air is supplied into the areas via 2 x 2 foot louvered ceiling ducts every 30 feet. Spot checks of these ducts showed an air velocity of 500 to 600 fpm. Air is exhausted from the area for recirculation via a 3.5 foot common ceiling plenum through ½ inch slots around the lighting fixtures. Spot checks of the slots around the lighting showed an air velocity of around 200 fpm. A cursory smoke tube survey was made and the dispersal of the smoke indicated an adequate flow of air at the time of the survey. Ninety percent of the air was being recirculated at the time of the survey.

A total of 66 employees (15 females and 51 males) completed the general questionnaire to ascertain what symptomatology or complaints they may have which may be attributed to the working environment. The ages of the participating employees ranged from 20 to 53 years of age. Most of the complaints were of stale, stuffy air from cigarette smoke, resulting for the most part in mild transient symptoms of eye and throat or respiratory tract irritation, headaches and cough. A total of 24 or thirty-six percent of the 66 employees had complaints which the employees felt were due to excessive smoking and that the ventilation system might not be adequate in certain areas. Eight or 12 percent of the 66 participating employees had existing health conditions (e.g., allergies, angina pectoris, etc.) which make them more susceptible to airborne

contaminants than other employees. Three (4.5 percent of the 66 employees) of the 24 employees who complained had complaints (e.g., shortness of breath, chest pains, persistent, rough cough, etc.) which were considered as more severe than most and occurred several times during most or all of the months. The following is a further breakdown of other information obtained from the medical questionnaires:

1. A total of 8 employees were smokers who had quit smoking. Three or 37 percent of these employees had complaints.

2. A total of 31 employees were non-smokers who had never smoked. Thirteen or 42 percent of these employees had complaints.

3. A total of 27 employees were current smokers. Eight or 30 percent of these employees had complaints.

Although probably not significant, it is of interest to note that thirty percent of the employees who smoke complained of smoke in the air, stuffy air, etc. There were few complaints concerning environmental conditions at the time of the survey.

F. Conclusion, Discussion, and Recommendations

The above data from the environmental survey and completed questionnaires by employees did not identify any airborne concentrations of toxic substances that could be considered a hazard to employees due to the working environment at the time of the survey. However, a few employees were found with health conditions such as allergies, respiratory problems and angina pectoris which would make these employees more susceptible to environmental conditions which were found or may be found at this facility. Therefore, environmental conditions may upon occasion be potentially toxic for those employees who may be more sensitive to environmental conditions. The percentage of overall complaints on smoking is not unusual in an office of this type which does not have an overall smoking policy. The NIOSH investigator was surprised to find that thirty percent of the employees who smoke complained of excess smoke in the work area, Although this may be significant, no further definitive statement should be made on this finding without further study.

There has been a lot of research on the effects of smoking on smokers, but not as much research on the effects of smoking on the non-smokers or the involuntary smoker. However, "The Public Health Service's analysis of the available data indicates there are significant medical implications in the effect of cigarette smoking on the nonsmoker in terms of angina pectoris (a heart condition), allergies and chronic lung diseases," said John Blamphin, Director of the Public Health Service Office of Public Affairs. Additional information on this matter is available from the

Office of Smoking and Health referred to in Section IV-D of this report. As a result of these studies, increased public awareness and social concerns on the associated problems from smoking, many government agencies and the more progressive and socially concerned private firms have established a "policy on smoking". An example of such a policy on smoking is contained in Appendix A of this report.

As pointed out in the body of the report, only a cursory survey was made of the ventilation system and little information was obtained on its operation or the periodic maintenance program. From the limited survey at various locations, the ventilation system appeared to be doing the job at the time of the survey. A few generalized "rules of thumb"[4,5,8,9,10] concerning ventilation are summarized below:

1. Body odors from occupants are maintained below objectionable levels by providing 0.45 M^3/m (cubic meters of air per minute) to 0.9 M^3/m per person.

2. Crowded rooms of less than 50 square meters of floor space per person need forced ventilation.

3. Local fans stir up the air and tend to prevent stagnant accumulations of heat, moisture, and smoke by merely keeping air stirred up.

4. Seven cfm (cubic feet of air per minute) per person is necessary when the air space is 500 cubic feet (cf) per person.

5. Twenty-five cfm per person is necessary for an air space per person when the air space is only 100 cf per person.

6. Irritation to cigarette smoke is maximal in warm, dry air and decreases with a small rise in relative humidity. The authors of one study[11] concluded that a ventilation rate of 12 M^3/hour/cigarette (cubic meters of air per hour per cigarette) was necessary to avoid eye irritation and 50 M^3/hour/cigarette was necessary to avoid unpleasant odors.

The above "rules of thumb" are of course generalizations and should not be used by a novice in evaluating ventilation systems. It is the NIOSH investigator's understanding that the company has received a petition or suggestion within the past few years from over 100 employees requesting improvement of the air contamination from cigarette smoke which apparently is prevalent on a frequent basis.

All personnel involved in this evaluation were most cooperative and informative. Also, the company has been concerned about this problem and has hired an outside consultant to measure the nicotine levels in the general areas covered by this evaluation. The industrial hygiene consultant firm obtained 14 air samples from throughout the facility and the samples were analyzed for nicotine. No nicotine was detectable in any of the samples which were less than 0.01 mg/M^3 (milligrams per cubic meter of

air sampled) of nicotine. All personnel involved in this evaluation were most cooperative and informative.

In view of the above information as well as the lack of some information concerning the effects on non-smokers, it is felt prudent to minimize potential exposures. The following recommendations are offered to provide a more desirable working environment for all personnel:

1. A "policy on smoking" should be established for those employees covered by this evaluation. The establishment of non-smoking areas should also be considered.

2. The company should provide for a complete evaluation of the current ventilation system to assure that (a) it is adequate, and (b) the periodic maintenance program is adequate.

V. REFERENCES

1. Environmental Protection Agency. National Primary and Secondary Air Quality Standards. Federal Register 36 (84-Part II):8186-8201 April 30, 1971.

2. American Conference of Governmental Industrial Hygienists (ACGIH) Documentation of the Threshold Limit Values for Substances in Workroom Air, Third Edition, 1977, plus subsequent additions.

3. NIOSH Criteria for a Recommended Standard for Occupational Exposure to Carbon Monoxide, 1973.

4. The Health Consequences of Smoking, U.S. DHEW Publication No. (CDC) 78-8357, 1976.

5. Surgeon General's Report on Smoking and Health, U.S. DHEW, 1979.

6. Aero Medical Association, Committee on Aviation Toxicology, Blakiston, New York, (1953).

7. Flury, F.; Zernik, F.: Schadliche Gase and Dampfe, J. Springer, Berlin (1931).

8. Industrial Ventilation - A Manual of Recommended Practice, 13th Edition, Committee on Industrial Ventilation, P.O. Box 453, Lansing, Michigan 48902.

9. Accident Prevention Manual for Industrial Operations, 6th Edition, National Safety Council, Chicago, Illinois 60611.

10. Recommended Industrial Ventilation Guidelines, January 1976, HEW Publication (NIOSH) No. 76-162.

11. Johansson, C.R.; Ronge, H.; Acute Irritation Effects of Tobacco Smoke in the Room Atmosphere, Nordisk Hygienist Tidskrift 46:45-50. 1965.

VI. ACKNOWLEDGEMENTS

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CHAPTER 1-60
POLICY ON SMOKING IN HEW OCCUPIED BUILDINGS AND FACILITIES

1-60-00 Purpose

The purpose of this chapter is to provide a Departmentwide policy on smoking in HEW-occupied buildings and facilities. It supersedes General Administration Manual Circular 72.1, dated February 7, 1972, "Policy on Smoking in HEW-Occupied Buildings".

1-60-10 Policy

A. It is the policy of the Department to protect the rights of nonsmokers (both Federal employees and the public) by restricting smoking in certain areas of HEW-occupied buildings and facilities. The Department also recognizes the rights of individuals to smoke, provided such action does not endanger life or property, cause discomfort or unreasonable annoyance to nonsmokers or infringe upon their rights.

B. In recognition of the fact that smoking is dangerous to the health of smokers; that tobacco smoke in a confined area creates a health hazard to nonsmokers suffering from heart disease, respiratory diseases or allergies related to tobacco smoke; and that smoke in a confined area may be irritating and annoying to nonsmokers and violates their privilege of breathing air relatively free from tobacco smoke contamination, every effort will be made to provide an environment reasonably free of such contaminants.

1-60-20 Applicability and Scope

A. The provisions of this directive apply to all organizational elements of HEW that occupy Government owned and leased HEW buildings and facilities.

B. These provisions are also applicable to HEW elements occupying Government owned and leased space which is assigned by GSA, and space obtained on a use permit, or nominal rental or rent-free basis. In such cases, the Department policy will apply within the confines of the assigned space over which HEW has exclusive custody and control.

1-60-30 Responsibilities

A. The Heads of POCs (for their headquarters, regional and field components); PROs (for the organizational elements under their direct control); and Director, Office of Management Services, OS (for the Office of the Secretary at headquarters); are responsible and accountable for implementing the provisions of this chapter. They will:

(1) Prepare an implementation plan setting forth the provisions of this chapter and methods to insure compliance within 60 days of its effective date. A copy of the plan will be submitted to the Assistant Secretary for Management and Budget for review.

(2) Include in the plan provisions for the following:

a. In Government owned HEW occupied buildings and facilities, the senior HEW official has the responsibility for implementing the Secretary's policy as it relates to space under his or her jurisdiction and control as implemented by his or her appropriate headquarters. Where two or more HEW organizational elements occupy the same building or facility and the officials are of the same rank, these officials will share implementing responsibility and issue a single directive covering HEW employees occupying the building or facility.

b. In buildings that are controlled by other Government Agencies, such as GSA or non-Government organizations or individuals, the Secretary's policy will be applied when the space is being utilized exclusively for HEW activities. If an agreement with the occupant, owner, or lessor can be reached on the control of smoking, officials are authorized to jointly issue implementing directives.

c. In addition to the actions required by this chapter, officers in charge of all Public Health Service facilities shall implement the "Policy on Smoking for Medical Care Facilities of the Department of Defense, Public Health Service and Veterans Administration" within their respective jurisdictions. (See Exhibit 1-60-1)

B. Heads of Staff Offices will support the provisions of this policy and assist the Heads of POCs, PROs, and Director, Office of Management Services, OS, in its implementation. The ASMB and Assistant Secretary for Personnel Administration will provide within their areas of responsibility supporting funds and training guidance and assistance.

1-60-40 Implementation Directives

A. General. HEW officials are directed to implement and enforce the smoking policy in areas under HEW control (see paragraph 1-60-20) according to the type of space involved.

B. Smoking shall not be permitted in:

(1) Conference rooms and classrooms. Conference rooms and classrooms are defined as a room designated for meetings and training sessions or for instructional purposes and are not used as an office or part of and individual's usual working area. Included in this definition are multi-purpose rooms while used as conference rooms or classrooms. The person responsible for holding the conference, meeting, or training session is also responsible for enforcing the no-smoking rule.

Prompt action shall be taken to post appropriate "No Smoking" signs in these areas. There shall be no ashtrays in these areas and receptacles for disposing of cigarettes, etc., shall be placed at entrances.

(2) Auditoriums. Smoking shall not be permitted in auditoriums. Prompt action shall be taken to post appropriate no-smoking signs in auditoriums. There shall be no ashtrays in these areas. Receptacles may be placed just inside the auditorium so that visitors may dispose of cigarettes, etc., when they become aware of the smoking restriction.

(3) Libraries. Smoking shall not be permitted in libraries except in such areas as may be designated as smoking areas.

(4) Elevators. Elevators shall be designated as no-smoking areas.

(5) Shuttle Vehicles. Smoking shall be prohibited in shuttle vehicles under HEW control A "No Smoking" sign shall be posted in each vehicle and the driver should inform all passengers of this requirement.

C. Work Areas

(1) Separation of Smokers and Nonsmokers

In consideration of the rights of nonsmokers in work areas, they will, within practical limits, be given the opportunity to be assigned to offices or workplaces separate and physically distinct from those of employees who smoke. The following provisions will apply in making these determinations:

-1- Efficiency of work units or administrative effectiveness shall not be impaired.

-2- Excessive costs will not result from providing physical separation.

-3- Additional space will not be required.

(2) In common work areas, in which two or more employees are assigned, supervisors will prohibit smoking if an employee objects in writing to tobacco smoke in the immediate work environment on the basis that it is having an adverse effect upon his or her health.

(3) Recognizing the rights of smokers who continue to smoke, supervisors will establish areas in which smoking is permitted. Such areas will be conspicuously posted.

(4) Smoking will be prohibited in those work environments in which the combination of smoking and special occupational factors presents a particular hazard to the health and safety of employees.

(5) The safety and health regulations and procedures established under C. (4) above, which prohibits smoking because of occupational exposure, will be enforced by all levels of management and supervisors. Violators of these regulations and procedures will be subject to disciplinary action under the provisions of Section 73.735-1101 of the Department's Standards of Conduct.

(6) In addition to the prohibition of smoking in accordance with paragraphs C. (1), (2), and (4) above, an employee who occupies a private office is authorized to declare that office a no-smoking area.

(7) As a general rule, a minimum rate of 5 cfm of fresh air per person is recommended to remove smoke from a work area and provide an environment reasonably free of contaminants.

D. Cafeterias or Dining Areas. No-smoking areas shall be established in cafeterias or dining areas under contract to HEW in Department-controlled buildings. This may be accomplished by agreement between the responsible HEW official and the concessionaire, and then included as a provision in future amendments and new contracts. A no-smoking area shall be designated and posted based on an estimate of smoking and non-smoking patrons served. Careful evaluations should be made after designating separate areas and future adjustments as to size should be made, based on experience. Improvements to air-conditioning or exhaust systems will also be considered in such areas where ventilation is poor.

E. Corridors, Lobbies and Restrooms. Normally, smoking in corridors, lobbies and restrooms of HEW-controlled buildings will be permitted, except as follows:

(1) Large lobbies or entrances that are used for waiting rooms, etc., will be divided into smoking and non-smoking areas. These areas will be properly posted to assure that all persons can easily determine where smoking is permitted. In addition, there will be no ashtrays or receptacles in the designated no-smoking area.

(2) If lobbies or hallways are utilized by smokers to a degree that results in employee complaints, the official in charge is responsible for evaluating the conditions and, if necessary, establishing them in a whole or part as no-smoking areas.

(3) It is determined that the air changes are not sufficient to assure reasonably clean air.

1-60-50 Education and Training

In view of the dangers to health caused by smoking, supervisors and employees will be given training on the dangers of smoking, methods of breaking the smoking habit, and the provisions of the chapter. The Assistant Secretary for Personnel Administration will provide for such training in supervisor's training programs and employee orientation sessions. In addition, within applicable regulations, employees will be provided with reasonable time off during working hours to attend established training programs that assist in breaking the smoking habit to the extent that the efficiency of work units will not be impaired. The Assistant Secretary for Personnel Administration will issue Department guidance covering such training.

1-60-60 Grievances

If an employee feels that the provisions of this policy are not being implemented the employee is entitled to utilize either the HEW agency grievance procedure, or a negotiated grievance procedure, whichever is applicable. Employees who file a grievance under these procedures will not be subjected to restraint, interference, coercion, discrimination or reprisal by virtue of having filed such a grievance.

1-60-70 Notices and Signs

A. Notices to Employees. Officials responsible for implementing requirements of this chapter shall inform employees under their jurisdiction in writing of the provisions applicable to them.

B. Signs.

(1) Suitable "No Smoking" signs shall be mounted in all rooms and areas where the no-smoking policy applies. Where common or public smoking areas are established, a card or other device will give directions to the nearest area. These directional signs will be placed adjacent to the "No Smoking" sign whenever possible.

(2) The numbers of signs to be posted or displayed will depend on the size of the room or area. Generally, two should be sufficient for small rooms and four for large rooms.

(3) Signs placed in designated no smoking areas (including rooms) will bear the message "No Smoking". Generally, the size of lettering should be one inch high for small rooms or areas and two inches high for large rooms and areas.

(4) The accepted international symbol for no smoking may be used on doors or appropriately displayed in no smoking areas, in addition to the signs indicated above.

1-60-80 Referral of Questions

Technical questions concerning smoking and health, educational materials, or suggested methods of discouraging cigarette smoking in Government buildings, should be referred to the Office on Smoking and Health, Office of the Assistant Secretary for Health, Department of Health, Education, and Welfare, Washington, D.C. 20201.