Subject: Occupational Safety and Health - Sprayed-on Asbestos in Company-owned and Leased Buildings

SL. SR 80-06-010

type letter: Strong Recommendation

date: June 3, 1980

distribution lists: STF 108, HRD 020, HRD 057, STF 102

file no. sl: SR 80-06-010

file no. related letters:

file no. other:

PLAINTIFF'S EXHIBIT

ATT-320

AT&T

American Telephone and Telegraph Company
222 Mt. Airy Road
Basking Ridge N. J. 07920
Phone (201) 221-2000

to: AVP - Support Services
Copies to Medical Directors, Safety, and Environmental Coordinators.

from: AVP - Support Services

description: Provides guidelines required for OSHA compliance in company-owned and leased buildings with sprayed-on asbestos.

* * *

Section 29 CFR 1910.1001 of standards issued by the Occupational Health and Safety Administration (OSHA) requires all employers to establish and maintain an effective program for protecting their employees against asbestos exposures which are above acceptable levels. The major areas of concern for the Bell System in this matter are in automotive operations (brakes and clutches) and in buildings (sprayed-on fire protection and insulation).

The attached document considers sprayed-on asbestos in company-owned and leased buildings, and is one of a series of Bell System guidelines intended to satisfy the requirements of the standards. Previous documents include:

- SR 79-05-398 "Occupational Safety and Health - Exposure to Airborne Asbestos Fibers - Request for Survey" - surveys all System-owned and leased buildings to determine if sprayed-on asbestos was used.
- RL 79-07-254 "Asbestos Hazards in Leased Buildings" - recommends that facilities under consideration for lease, containing sprayed-on asbestos, be reviewed before final decision.
- GL 73-08-054 "Motor Vehicle Maintenance - Protection Against Exposure to Asbestos Fibers" - provides general procedures for protecting employees against asbestos exposure in garages.
- GL 77-07-024 "Motor Vehicle Maintenance - Brakes and Clutches" - provides specific recommendations for protecting employees against asbestos exposure while performing maintenance operations on brakes and clutches.

In addition, an SR will be issued shortly entitled "Occupational Safety and Health - Exposure to Airborne Asbestos Fibers" which will provide basic information to establish an overall asbestos control program.

The results of the survey of approximately 29,000 owned and leased Bell System buildings (SR 79-05-398) indicates that there are less than 1% or 216 (108 owned and 108 leased) buildings which are suspected to have sprayed-on asbestos. However, bulk sample tests necessary to determine if a substance is asbestos were not performed in all cases during the survey.

Concurrent with the building survey, Bell Laboratories was requested to perform tests to determine the possible levels of exposure where asbestos was present. The results of these tests may be summarized as follows:

- If sprayed-on asbestos is undisturbed, airborne levels of asbestos are well below OSHA standards (typical office or work space environment).

- During typical work operations which do not require the removal or displacement of the sprayed-on material, exposure levels are below OSHA standards.

- During any work operations where there is significant disruption of the sprayed-on material, there may be exposures above the OSHA standard (for example, work in crawl spaces or ceilings or removing ceiling panels).

- During renovations, ripouts and remodeling activities, airborne asbestos levels are generally above OSHA standards.

As a result of the above it is recommended that:

1. Bulk sample tests be performed to confirm the presence or absence of asbestos in each of the 216 buildings identified in the survey, and any other building which may have asbestos.

2. Warning signs, labels, or other means of control must be provided for employees who must perform work in an area where sprayed-on material may be disturbed.

3. Methods must be developed to minimize or eliminate the possibility of excessive exposure during renovations or removal activities in the affected buildings. The Environmental Protection Agency (EPA) has specific requirements on these activities.

4. A disposal procedure must be established for any collected asbestos-contaminated materials. The EPA also has requirements on this activity.

We recommend the primary responsibility for implementation of the required program as detailed in the attached instruction will reside with the Building Engineering Group at BOC Headquarters. As such, a coordinator in this organization must be identified. In addition, Building Engineering must work closely with appropriate Medical, Safety, Environmental and Building Operations Force representatives. The Building Operations Force supervisor responsible for effected buildings will ultimately be responsible for the day-to-day procedures that are required. It is strongly recommended that implementation of these guidelines be initiated immediately.

The resource impact of this letter on the Bell System is estimated as follows:

Capital

. Signage	$10,000	
. Air Sample Test Kit	10,000	($500 per kit)
. Respirators	10,000	($ 10 per cartridge type)
Total Capital	$30,000	

Expense

. Bulk Sample Analysis by Outside Laboratories	$10,000	($25 to $50 per sample)
. Air Sample Analysis by Outside Laboratories	50,000	($300 to $500 per sample)
Total Expense	$60,000	

Revenue Change

No revenue impact

Force Changes

No additional manpower required, however, certain Building Engineering, Building Operations, Medical and Safety personnel must include this activity with their other responsibilities.

In addition to the above impact, there may be situations where the sprayed-on asbestos must be removed, contained or encapsulated. It is anticipated that this will occur only in areas which are to be renovated or remodeled. The cost for these activities (based on current prices) per square foot of floor area renovated is estimated as follows:

. Removal	$6 per sq. ft.
. Encapsulation	$4 per sq. ft.
. Containment	$3 per sq. ft. (for painting)
	$6 per sq. ft. (for structural enclosing)

Attachment

Guidelines for Sprayed-On Asbestos In Company-owned and Leased Buildings

General

The following guidelines are to be used in conjunction with the general program outlined in an SR to be issued shortly, "Occupational Health and Safety - Exposure to Airborne Asbestos Fibers," in complying with OSHA standards pertaining to Bell System-owned and leased buildings which have sprayed-on asbestos used for fire protection and/or heat insulation.

OHSA Asbestos Standard 1910.1001 (July 1, 1976)

The eight hour time weighted average (TWA) airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air. In addition, no employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air. Medical surveillance is required if employees are exposed to .1 fibers per cubic centimeter (8 - hours TWA) or greater.

Confirmation of Asbestos

SR-79-05-398 requested that the BOCs perform a comprehensive survey to identify all owned and leased buildings which apparently contain sprayed-on asbestos. A summary of the System results is shown as Appendix A. It was not necessary to confirm the asbestos with a bulk sample test as part of the survey, however, a number of companies have performed this testing.

As part of the steps required for compliance with the asbestos standard, it will be necessary (in each facility identified as apparently having sprayed-on asbestos) to perform a bulk sample test for confirmation that the material is or is not asbestos. If the test indicates asbestos, then an ambient air test must also be performed. Such ambient air tests will determine the level of airborne asbestos in the area on an 8-hr TWA basis. The ambient air tests should be made in areas where the asbestos exists and is in an undisturbed state, i.e., no one is working on the asbestos. If the material exists throughout the building, several typical locations should be identified and an ambient air test made in each location. It is extremely important that the ambient samples as well as the bulk be analyzed by qualified laboratories approved by NIOSH. See SR to be issued shortly, "Occupational Health and Safety - Exposure to Airborne Asbestos Fibers," for a discussion of bulk sample and ambient air sample testing.

The objectives of the bulk sample and ambient air tests are two-fold.

1. To establish a permanent record which indicates that each company has identified the existence of the material and recorded the normal airborne exposure levels. The bulk and air sample results should also be forwarded to AT&T, Real Estate and Property Management Group 222 Mount Airy Road, Basking Ridge, New Jersey 07920.

2. To confirm that ambient levels are not above the OSHA standard. Numerous BTL tests have indicated that this will be the normal case. If, however, a situation occurs where ambient levels in an undisturbed environment are above OSHA standards, and this is corroborated with additional testing, then it is necessary to implement some type of engineering controls. These controls may be one of the following:

   - Enclosure of the material - this may be achieved with a dropped ceiling.

   - Sealing of the material - this can be achieved by spraying an additional material over the sprayed-on asbestos. Presently, there are a number of different types of sealants available for this purpose including latex paints, vinyl or butyl polymers, plaster emulsions, epoxy materials and inorganic silicates.

   - Removal of the material - this activity should be avoided, if at all possible, due to the disturbance of work activity as a result of the extremely high levels of airborne asbestos that are generated in the removal, and the need to replace the material with other building products to achieve the original objective of the asbestos. If it is not possible to avoid removal then the appropriate procedures outlined below must be followed.

Before any of the above engineering controls are implemented, a case by case feasibility study must be made and individual situations discussed with the Real Estate Management Group at AT&T.

Follow-up Measurements

It is recommended that follow-up ambient air tests be performed every five years to assure that asbestos deterioration has not occurred to the point where levels are above OSHA standards.

Labeling/Identification of Areas with Sprayed-on Asbestos

Compliance with the OSHA standard also requires that either Caution labels be employed to identify the sprayed-on asbestos material or engineering controls be employed as described above under Objective 2. The label should be approximately 6" x 3" with red lettering and shall state

Caution
This Area Contains Asbestos Materials
Avoid Creating Dust
Breathing Asbestos May Cause
Serious Bodily Harm

At least one label shall be prominently located in each area where exposed sprayed-on asbestos exists so that anyone working in the area will be alerted to the potential hazard. For unexposed areas, such as hung ceilings, the label should be located in a central control point so that the people who would have the need to enter these areas would be made aware of the asbestos and its location. This area may be the building maintenance office or a similar location. It may also be desirable to provide a wall-mounted drawing in the building manager's office illustrating asbestos covered areas in the building.

Work Procedures

In all buildings identified as having sprayed-on asbestos every effort should be made to avoid work procedures which result in disruption of the asbestos material and the resultant release of fibers into the air. Preliminary data has indicated that for routine work operations which do not require the removal or displacement of any sprayed-on asbestos, exposure levels are well below those permitted by the current OSHA standard. In those cases where some handling of the material is necessary the sprayed-on asbestos should be worked in a moistened state, if possible.

If it is not possible to avoid work procedures which result in a significant disruption of the sprayed-on material then protective clothing and respirators must be employed during the work procedures. See SR to be issued shortly "Occupational Health and Safety - Exposure to Airborne Asbestos Fibers" for a discussion of protective clothing and the OSHA requirements for respirator protection. Of particular concern are exposures to employees who work within hung ceilings, doing such work operations as installing or removing telephone cables and electrical wiring, or working on building equipment.

The above work procedure modification must be achieved through meetings with employees in the building and by posting such a policy in appropriate central work locations in the building. Before engaging in any work procedures which may disturb sprayed-on asbestos, employees must contact the Building Operations Control Center (BOCC), if implemented in that Company, or the individual in that building who is responsible for implementing these guidelines.

In addition to employee activity, it is also important that any contractor engaged in work activities which might disrupt the asbestos material be informed that they must comply with these procedures.

Remodeling or Renovation Activites

Remodeling or renovation work in areas with sprayed-on asbestos poses the greatest asbestos hazard in Bell System buildings and may require the removal, sealing or enclosure of the asbestos. As such it will be necessary to fully protect all employees by isolating the work area from the rest of the facility, and monitoring both inside and outside the work

areas. Workers should wear appropriate protective clothing and respirators, and the area should be cleaned after the renovations with wet methods. Remeasurement of ambient levels should be performed to ascertain that they are below OSHA standards.

In contracting remodeling and renovation work, specific guidelines must be established and included in the specification for bidding by outside contractors. It is extremely important to recognize that asbestos removal activities are complex and not routine to most building contractors. As such the BOCs must be assured that any contractor who will perform this work has experience in asbestos removal. Section 61.22(d) "Demolition and Renovation" of the EPA's National Emission Standard for Asbestos details federal requirements for these activities and is attached as Appendix B.

Waste Disposal

All asbestos scrap and debris must be collected and disposed of in accordance with EPA requirements. Section 61.22(j) of the EPA's National Emission Standard for Asbestos details the federal requirements for asbestos waste disposal and is attached as Appendix C. However, some states may have their own laws regarding disposal and Companies are advised to check with the EPA State Waste Management Agencies for compliance with local disposal regulations.

APPENDIX A

RESULTS OF ASBESTOS SURVEY

	Owned		Leased	
	Total	W/Asbestos	Total	W/Asbestos
PNB	696	4	254	1
Wisconsin	320	8	72	0
NJ	388	13	223	6
NY	1001	15	357	26
Southern	1302	3	622	5
Ohio	404	0	231	4
NWB	2469	6	303	0
SNET	200	1	54	4
Michigan	483	3	317	0
Mountain	1868	4	438	5
Southwestern	4458	4	568	1
New England	812	3	347	8
C & P	839	8	363	8
Pacific	1020	9	649	9
Illinois	240	3	195	0
South Central*	1284	1	561	0
Cincinnati	70	0	19	0
Bell of Pa.	674	6	325	3
Indiana	298	0	64	0
Long Lines	4300	2	100	7
BTL	26	3	2	1
195 Broadway	19	12	41	19
BSCTE	0	0	2	1
TOTALS	23,199	108	6108	108

* Not including Louisiana

ENVIRONMENTAL PROTECTION AGENCIES REQUIREMENTS - NATIONAL EMISSION STANDARD FOR ASBESTOS 61.22(d) - "Demolition and Renovation"

The requirements of this paragraph shall apply to any owner or operator of a demolition or renovation operation who intends to demolish any institutional, commercial, or industrial building (including apartment buildings having more than four dwelling units), structure, facility, installation, or portion thereof which contains any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that is covered or coated with friable asbestos materials, except as provided in paragraph (d)(1) of this section; or who intends to renovate any institutional, commercial, or industrial building, structure, facility, installation, or portion thereof where more than 80 meters (ca. 260 feet) of pipe covered or coated with friable asbestos materials are stripped or removed, or more than 15 square meters, (ca. 160 square feet) of friable asbestos materials used to cover or coat any duct, boiler, tank, reactor, turbine, furnace, or structural member are stripped or removed.

(1) (i) The owner or operator of a demolition operation is exempted from the requirements of this paragraph: Provided, (A) The amount of friable asbestos materials in the building or portion thereof to be demolished is less than 80 meters (ca. 260 feet) used on pipes, and less than 15 square meters (ca. 160 square feet) used on any duct, boiler, tank, reactor, turbine, furnace, or structural member, and (B) the notification requirements of paragraph (d)(1)(ii) are met.

(ii) Written notification shall be postmarked or delivered to the Administrator at least 20 days prior to commencement of demolition and shall include the information required by paragraphs (d)(2) of this section, with the exception of the information required by paragraphs (d)(2) (iii), (vi), (vii), (viii), and (ix) of this section, and shall state the measured or estimated amount of friable asbestos materials which is present. Techniques of estimation shall be explained.

43 FR 26372, June 19, 1978

(2) Written notice of intention to demolish or renovate shall be provided to the Administrator by the owner or operator of the demolition or renovation operation. Such notice shall be postmarked or delivered to the Administrator at least 10 days prior to commencement of demolition, or as early as possible prior to commencement of emergency demolition subject to paragraph (d)(6) of this section, and as early as possible prior to commencement of renovation. Such notice shall include the following information:

(i) Name of owner or operator.

(ii) Address of owner or operator.

(iii) Description of the building, structure, facility, or installation to be demolished or renovated, including the size, age, and prior use of the structure, and the approximate amount of friable asbestos materials present.

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(iv) Address or location of the building, structure, facility, or installation.

(v) Scheduled starting and completion dates of demolition or renovation.

(vi) Nature of planned demolition or renovation and method(s) to be employed.

(vii) Procedures to be employed to meet the requirements of this paragraph and paragraph (j) of this section.

(viii) The name and address or location of the waste disposal site where the friable asbestos waste will be deposited.

(ix) Name, title, and authority of the State or local governmental representative who has ordered a demolition which is subject to paragraph (d)(6) of this section.

(3) (i) For purposes of determining whether a planned renovating operation constitutes a renovation within the meaning of this paragraph, the amount of friable asbestos material to be removed or stripped shall be:

(A) For planned renovating operations involving individually non-scheduled operations, the additive amount of friable asbestos material that can be predicted will be removed or stripped at a source over the maximum period of time for which a prediction can be made. The period shall be not less than 30 days and not longer than one year.

(B) For each planned renovating operation not covered by paragraph (d)(3)(i)(A), the total amount of friable asbestos material that can be predicted will be removed or stripped at a source.

(ii) For purposes of determining whether an emergency renovating operation constitutes a renovation within the meaning of this paragraph, the amount of friable asbestos material to be removed or stripped shall be the total amount of friable asbestos material that will be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(4) The following procedures shall be used to prevent emissions of particulate asbestos material to outside air:

(i) Friable asbestos materials, used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member, shall be removed from any building, structure, facility or installation subject to this paragraph. Such removal shall occur before wrecking or dismantling of any portion of such building, structure, facility, or installation that would break up the friable asbestos materials and before wrecking or dismantling of any other portion of such building, structure, facility, or installation, that would preclude access to such materials for subsequent removal. Removal of friable asbestos materials used on any pipe, duct, or structural member which are encased in concrete or other similar structural material is not required prior to demolition, but such materials shall be adequately wetted whenever exposed during demolition.

(ii) Friable asbestos materials used on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall be adequately wetted during stripping except as provided in paragraphs (d)(4)(iv), (d)(4)(vi), or (d)(vii) of this section.

(iii) Pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members that are covered or coated with friable asbestos materials may be taken out of any building, structure, facility, or installation subject to this paragraph as units or in sections provided the friable asbestos materials exposed during cutting or disjoining are adequately wetted during the cutting or disjoining operation. Such units shall not be dropped or thrown to the ground, but shall be carefully lowered to ground level.

(iv) The stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that has been removed as a unit or in sections as provided in paragraph (d)(4)(iii) of this section shall be performed in accordance with paragraph (d)(4)(ii) of this section. Rather than comply with the wetting requirement, a local exhaust ventilation and collection system may be used to prevent emissions to the outside air. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping of friable asbestos materials. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems except as provided in paragraph (f) of this section.

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(v) All friable asbestos materials that have been removed or stripped shall be adequately wetted to ensure that such materials remain wet during all remaining stages of demolition or renovation and related handling operations. Such materials shall not be dropped or thrown to the ground or a lower floor. Such materials that have been removed or stripped more than 50 feet above ground level, except those materials removed as units or in sections, shall be transported to the ground via dust-tight chutes or containers.

(vi) Except as specified below, the wetting requirements of this paragraph are suspended when the temperature at the point of wetting is below 0°C (32°F). When friable asbestos materials are not wetted due to freezing temperatures, such materials on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall, to the maximum extent possible, be removed as units or in sections prior to wrecking. In no case shall the requirements of paragraphs (d)(4)(iv) or (d)(4)(v) be suspended due to freezing temperatures.

(vii) For renovation operations, local exhaust ventilation and collection systems may be used instead of wetting as specified in paragraph (d)(4)(ii), to prevent emissions of particulate asbestos material to outside air when damage to equipment resulting from the wetting would be unavoidable. Upon request and supply of adequate information, the Administrator will determine whether damage to equipment resulting from wetting to comply with the provisions of this paragraph would be unavoidable. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping and removal of friable asbestos material. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems, except as provided in paragraph (f) of this section.

(5) Sources subject to this paragraph are exempt from the requirements of 61.05(a), 61.07, and 61.09.

(6) The demolition of a building, structure, facility, or installation, pursuant to an order of an authorized representative of a State or local governmental agency, issued because that building is structurally unsound and in danger of imminent collapse is exempt from all but the following requirements of paragraph (d) of this section:

(i) The notification requirements specified by paragraph (d)(2) of this section;

(ii) The requirements on stripping of friable asbestos materials from previously removed units or sections as specified in paragraph (d)(4)(iv) of this section;

(iii) The wetting, as specified by paragraph (d)(4)(v) of this section, of friable asbestos materials that have been removed or stripped;

(iv) The portion of the structure being demolished that contains friable asbestos materials shall be adequately wetted during the wrecking operation.

39 FR 15936, May 3, 1974;
40 FR 45292, October 14, 1975

ENVIRONMENTAL PROTECTION AGENCY REQUIREMENTS -

NATIONAL EMISSIONS STANDARD FOR ASBESTOS

61.22(j) WASTE DISPOSAL

Waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations: The owner or operator of any source covered under the provisions of paragraphs (c), (d), (e), or (h) of this section shall meet the following standards:

(1) There shall be no visible emissions to the outside air except as provided in paragraph (j)(3) of this section, during the collection; processing, including incineration; packaging; transporting; or deposition of any asbestos-containing waste material which is generated by such source.

(2) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of 61.25.

(3) Rather than meet the requirement of paragraph (j)(1) of this section, an owner or operator may elect to use either of the disposal methods specified under (j)(3)(i) and (ii) of this section, or an alternative disposal method which has received prior approval by the Administrator:

(i) Treatment of abestos-containing waste material with water:

(A) Control device asbestos waste shall be thoroughly mixed with water into a slurry and other asbestos-containing waste material shall be adequately wetted. There shall be no visible emissions to the outside air from the collection, mixing and wetting operations, except as provided in paragraph (i) of this section.

(B) After wetting, all asbestos-containing waste material shall be sealed into leak-tight containers while wet, and such containers shall be deposited at waste disposal sites which are operated in accordance with the provisions of 61.25.

(C) The containers specified under paragraph (j)(3)(i)(B) of this section shall be labeled with a warning label that states:

Caution
Contains Asbestos
Avoid Opening or Breaking Container
Breathing Asbestos is Hazardous
to Your Health

Alternatively, warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910-93a(g)(2)(ii) may be used.

(ii) Processing of asbestos-containing waste material into non-friable forms:

(A) All asbestos-containing waste material shall be formed into non-friable pellets or other shapes and deposited at waste disposal sites which are operated in accordance with the provisions of 61.25.

(B) There shall be no visible emissions to the outside air from the collection and processing of asbestos-containing waste material, except as specified in paragraph (f) of this section.

(4) For the purpose of this paragraph (j), the term all asbestos-containing waste material as applied to demolition and renovation operations covered by paragraph (d) of this section includes only friable asbestos waste and control device asbestos waste.