PLAINTIFF'S
EXHIBIT
AL-1621

E. E. RUMBERGER

PITTSBURGH OFFICE

TO

1983 June 15

RE: ASBESTOS EXPOSURE AND POTENTIAL HEALTH HAZARD
Ref: I.H. Technical Bulletin No. 83-3 (Attached)

The need for greater control over potential exposures to asbestos is becoming more apparent. The attached Technical Bulletin, prepared by Joan Sander, outlines Alcoa's new policy on exposure levels and industrial hygiene precautions, and reiterates the Medical Department's program for medical surveillance.

Specific requirements are triggered by the Action Level, defined as 0.1 fiber/cc, and the new Alcoa Permissible Limit of 0.5 fibers/cc. At these relatively low concentration levels, the analytical method (P&CAM 239-asbestos fiber count) lacks a high level of precision due to inherent inaccuracies associated with the method. Therefore, a sampling strategy based on several samples should provide a characterization of job tasks, rather than basing decisions on a single sample. Likewise, professional judgment is advised for interpretation of results. Please call upon the Corporate Industrial Hygiene staff for assistance in this area.

Due to the serious health concerns associated with asbestos exposures, all potential exposures to asbestos fibers must be eliminated or controlled to the Alcoa Permissible Limit. Employee training, medical surveillance, routine air monitoring, and personal protective equipment are essential elements of such a control program. Please let us know if we can provide assistance with any aspect of asbestos replacement or control.

E. E. RUMBERGER

EER/eds
Attachment

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I.H. Mailing List - I.H. Plant Contacts
Industrial Hygienists - International
I.H. Division - Pittsburgh & ATC
I.H. Technicians
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ALCOA

Industrial Hygiene Technical Bulletin

No. 83-3

Date: 1983 June 15

RE: ASBESTOS EXPOSURES

Due to the very serious nature of asbestos exposure hazards, a closer look was taken at our policies and procedures for controlling such exposures. Starting in 1978, Alcoa implemented an Asbestos Replacement Program with the objective of making our operations as free of asbestos-containing materials as possible. While the program has met with considerable success, there are still some applications where acceptable substitutes have not been found. Likewise, we currently have numerous applications where asbestos products were used in past construction and are still in place. This situation may pose a potential health hazard in the event that asbestos-containing materials become capable of fiber release (i.e. due to deterioration, water damage, etc.), or during renovation or demolition activities.

The purpose of this technical bulletin is to clarify Alcoa's policy and procedures for job tasks involving exposures to asbestos fibers. It applies to both renovation or demolition of asbestos-containing materials, as well as routine or repetitive job tasks involving asbestos exposures. Attached please find a one page flow chart entitled "Asbestos Exposure Procedures" which summarizes the requirements outlined in the following text based upon job activity and air monitoring data.

I. DEFINITIONS

A. "Asbestos fiber" means a fibrous form of asbestos longer than 5 microns with a length-to-diameter ratio of at least 5 to 1, and with a maximum diameter of 3 microns.

B. "Friable asbestos" means any material that contains more than 1% asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

C. "Action Level" is defined as 0.1 fibers/cc (8 hour TWA). Medical surveillance, air monitoring and employee training requirements are triggered at the action level.

D. "Alcoa Permissible Limit (APL)" is defined as 0.5 fibers/cc (8 hour TWA). Respiratory protection is required when exposures may exceed the APL. Likewise, a respiratory protection program (employee training, fit testing, medical approval, etc.) must be implemented.

E. "Routine or Repetitive Job Tasks" means employees engaged in work activities involving exposures to asbestos fibers on an average frequency of an 8 hour shift per month or greater. (Examples include working with marinite headers, trough linings, thermocouple wire, brake lining, etc.).

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F. "Renovation or Demolition" means those activities involving the removing, stripping, wrecking, or taking out of friable asbestos from any structural member. (Examples include removing asbestos pipe insulation, furnace tearouts, etc.).

II. JOB CLASSIFICATIONS

A. Routine or Repetitive Job Tasks.

The industrial hygienist should assess all job tasks involving routine or repetitive exposures to asbestos fibers. (Examples given in Definitions section.) Industrial hygiene sampling for asbestos should be performed if such is not already the case. If asbestos concentrations are below the action level, and you are not relying on engineering controls (i.e. local exhaust) to reduce the airborne concentration, no further action is required, pending process or product changes that might potentially increase the airborne fiber concentrations. Areas relying on engineering controls to reduce airborne asbestos fibers should be sampled at least annually to evaluate the effectiveness of the controls. If exposure levels are between the action level and APL, employees must be trained in the safe handling of asbestos and receive medical surveillance. Routine monitoring should be performed on a 6 month basis. When exposures are found to equal or exceed the APL, the procedures mentioned above as well as respiratory protection will be required. Disposable protective clothing may also be necessary.

B. Renovation or Demolition Job Tasks.

Typically, maintenance tasks involving renovation or demolition activities represent likely potential excessive exposures. The prudent course for such job tasks would be to automatically implement the appropriate precautionary measures: (1) medical surveillance, (2) respiratory protection, (3) employee training and (4) protective clothing (as necessary). Wherever possible, wet down the material to be removed to minimize dust. Do not use water if electrical or other hazards exist (i.e., water on phosphorous-containing refractories may result in phosphine gas formation).

The following sections offer supporting detail concerning required industrial hygiene safeguards when working with asbestos-containing materials.

III. REQUIREMENTS

A. Medical Surveillance.

Employees exposed above the action level on an average frequency of one eight hour shift per month or greater will re-

ceive an annual medical examination. This periodic evaluation will include a questionnaire to elicit the symptomatology of respiratory disease, pulmonary function tests (FVC and $FEV_{1.0}$), and a chest roentgenogram. Employees should be notified of any abnormalities within 30 days of such a finding by the evaluating physician.

B. Employee Training

All employees exposed to asbestos concentrations above the action level shall receive annual training in the proper handling of asbestos. This program should include an explanation of the following:

(1) The requirements outlined in this bulletin.
(2) Hazardous properties of asbestos.
(3) Work practices and engineering controls utilized to reduce exposures.
(4) Safe work procedures for handling asbestos-containing materials.
(5) The effectiveness of personal protective equipment.

Attendance at such training sessions should be documented and filed appropriately.

C. Air Monitoring

All tasks involving potential exposures to asbestos require baseline sampling. Routine air monitoring should be continued on a six month basis for routine or repetitive job tasks with asbestos concentrations at or above the action level. If exposure levels are found to be below the action level, air monitoring should be performed if process or product changes occur which might potentially increase the airborne fiber concentrations. If reliance on engineering controls is necessary to reduce exposures below the action level, annual monitoring should be performed to evaluate the effectiveness of the controls.

D. Respiratory Protection

Respirators are required of anyone performing a job task whose potential exposure to airborne asbestos fibers may exceed the APL. This would include all demolition/renovation activities, and may include routine or repetitive job tasks, depending upon industrial hygiene sampling data.

For exposures up to 10 fibers/cc, the following NIOSH approved respirators are acceptable for protection against asbestos fibers:

3M 8710, 9900, 9910 or 9920
AO R1070
Willson 1410
MSA Comfo II with Type F Filter

Exposures in excess of 10 fibers/cc require the use of a NIOSH approved powered air purifying respirator, or a type "C" supplied air respirator.

While the Alcoa Permissible Limit determines the requirement for respiratory protection, disposable respirators should be made available to all employees with potential asbestos exposure who desire to wear them, regardless of their levels of exposure. When respiratory protection is used, a respirator program in compliance with Alcoa Engineering Standard 18.1.1 must be established and implemented. Annual fit-testing and training, medical approval, NIOSH approved respirators, and written SOP's should be included with this program.

E. Protective Clothing

The area of protective clothing (disposable garments) is best left up to the judgement of the plant industrial hygienist after an assessment of the job task and its associated dust exposures have been made. For demolition or renovation activities in which there is a considerable amount of dust generation, or when fibers may accumulate on work clothing, disposable protective clothing is warranted and required. All contaminated protective clothing, as well as respirators, should be disposed of as asbestos-containing material.

F. EPA Requirements

The Clean Air Act regulates removal, cleanup, and disposal of asbestos material under certain circumstances: (1) the material is "friable asbestos", and (2) asbestos is removed from renovation or demolition work, and (3) asbestos material quantity is greater than 260 linear feet of pipe covering and 160 ft^2 from other sources.

If only the first two considerations exist, only notification procedures are required. If all three conditions exist, Clean Air Act Regulations Subpart B, Parts 61.22(d), (i), (j), (l) must be followed. Contact the Plant Environmental Control Department for assistance with the above.

IV. ALCOA'S ASBESTOS REPLACEMENT PROGRAM

Alcoa's Asbestos Replacement Program was instituted in 1978 with the objective of making our plants as free of asbestos materials as possible. Suitable replacements for most, but not all, asbes-

tos products have been found. Efforts to find replacements for the remaining applications will continue.

It is imperative that accurate records be kept to identify areas where asbestos-containing materials are being used, or have been used in past construction. To minimize potential health hazards associated with renovation or demolition of asbestos products, all maintenance projects should be reviewed for potential asbestos exposures prior to starting the job. If asbestos is suspected, the material should be treated as such unless laboratory analysis confirms otherwise. Samples of bulk material can be analyzed by Alcoa's Environmental Health Laboratory.

Asbestos materials in good condition which do not represent likely exposures should not be removed simply because they contain asbestos since doing so may present a greater hazard during the actual removal. However, a routine inspection program of the material should be implemented to insure that the situation does not change.

If you have any questions concerning the above, please do not hesitate to contact me.

JOAN E. SANDER

JES:sc

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I. H. Division - Pittsburgh & ATC
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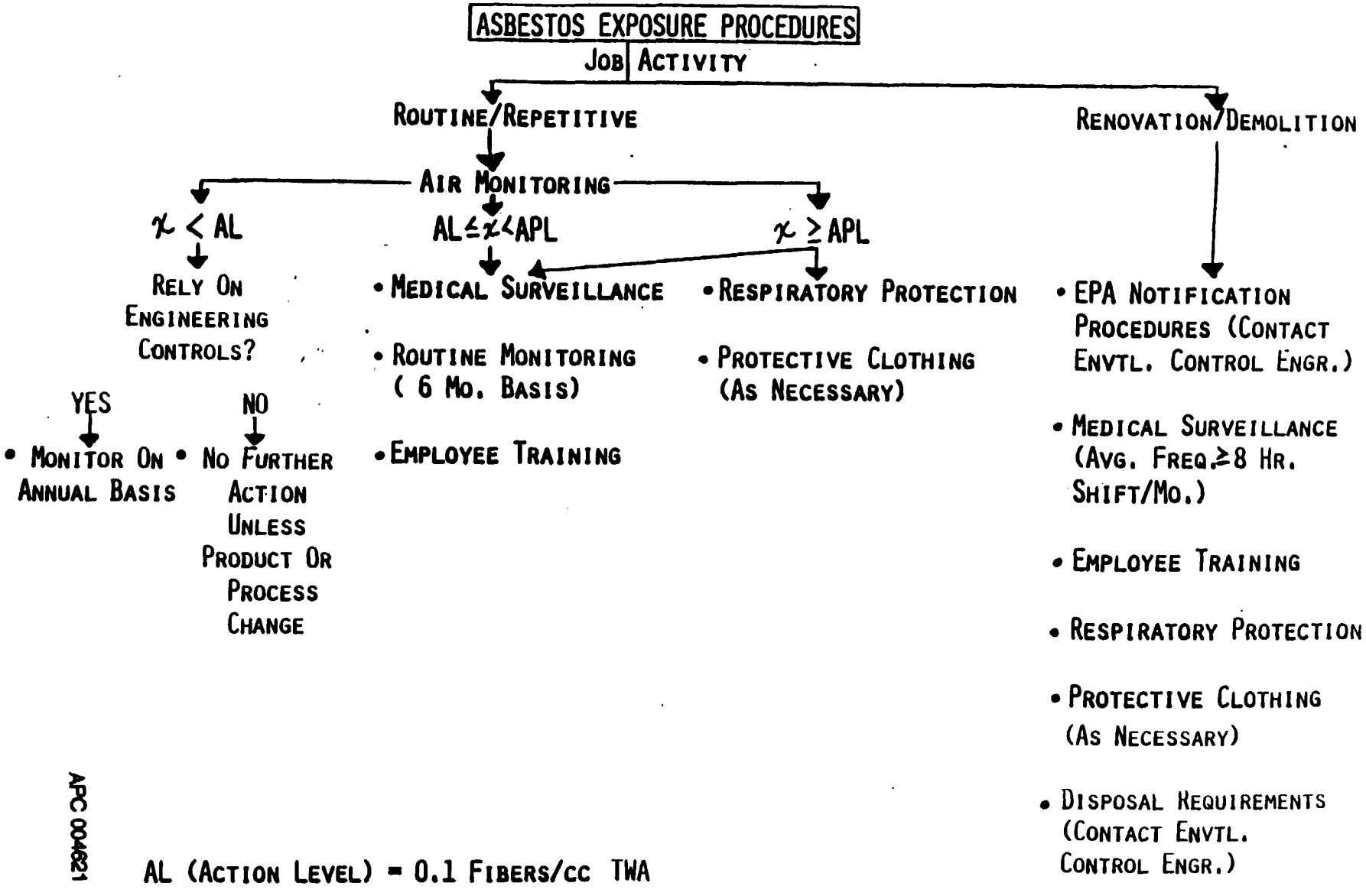

APC 004621

AL (ACTION LEVEL) = 0.1 FIBERS/CC TWA

APL (ALCOA PERMISSIBLE LIMIT) = 0.5 FIBERS/CC TWA