

FILE NAME: RT Vanderbilt (RTV)

DATE: 1976 Dec 13

DOC#: RTV323

DOCUMENT DESCRIPTION: Public Citizen Report Criticizing OSHA on Asbestos in Vanderbilt Talc



December 13, 1976

S. John Byington
Chairman
Consumer Product Safety Commission
1750 K Street, N.W.
Washington, D.C. 20207

Dear Mr. Byington:

Enclosed is a copy of our report, entitled "OSHA Serves a Corporate Client: Ignoring Asbestos in Vanderbilt Industrial Talc."

We note that Vanderbilt industrial grade talc contains high levels of the mineral tremolite, which OSHA defines as asbestos. We also note that the talc reaches consumers in several forms. These include spackling compounds, putties, paint and tiles. However, we have no way of identifying the companies which use Vanderbilt talc or the specific products which contain the talc.

Due to the strong medical evidence of the dangers of asbestos to the human body, it is imperative that consumers know which products they use contain asbestos. Products containing tremolite should be labeled as hazardous, and possibly banned. Exposure must be kept to a minimum.

Therefore, we urgently request that the Consumer Product Safety Commission identify for consumers those products under its jurisdiction that contain tremolitic talc, and publish a list of products for consumer information.

Sincerely,

A handwritten signature in cursive script that reads "Peter A. Greene".

Peter A. Greene
Staff Associate

A handwritten signature in cursive script that reads "Sidney M. Wolfe".

Sidney M. Wolfe, M.D.
Director

Enclosure

PAG/cft

HEALTH RESEARCH GROUP • 2000 P STREET, N.W., WASHINGTON, D.C. 20036 • (202) 872-0320

KEI001017

TABLE OF CONTENTS

Summary of Facts	1
Introduction	1
Who Is Exposed?	2
Money to Politicians	4
Who Is Responsible?	4
United Steelworkers Are Silent	5
Temporary Relief: Background	6
Vanderbilt's Tactics	7
Vanderbilt's Problems Increase	8
Self-Certification	9
Fiber Redefined Illegally	11
NIOSH Objects in Private	13
NIOSH Investigates	14
OSHA Standards Writers Disagree	16
Sequence of Events	17
Conclusions	23
Glossary	25
Footnotes	26

Summary of Facts

1. Talc mined by the R.T. Vanderbilt Company in upstate New York contains up to 70 percent of the mineral tremolite, which is one of six minerals defined as asbestos in the OSHA asbestos standard of 1972.

2. Those exposed to this industrial-grade, asbestos-ridden talc include the 170 employees at the mines, as well as countless workers who use the talc in industrial processing, and consumers who use the talc in home-repair activities involving such products as spackling compound. Air sampling by government agencies has shown unacceptably high asbestos levels in Vanderbilt's talc mines and in at least two plants using Vanderbilt talc.

3. A respected epidemiological study of New York State talc workers has shown a lung cancer rate of four times the general population's.

4. Vanderbilt disputes the inclusion of tremolite in the asbestos standard, claiming that most tremolite is not asbestos, that the medical evidence is inconclusive, and that the company will face financial ruin if the standard is fully enforced.

5. Vanderbilt's tactics have included a petition to OSHA as well as enlistment of high pressure support from at least three Senators and two Representatives. Company president H.B. Vanderbilt rewarded three of these politicians with financial contributions in the last election.

6. OSHA responded to Vanderbilt's demands by illegally redefining an asbestos fiber and by encouraging Vanderbilt to certify to its customers that its talc contained no asbestos.

The illegality consisted of formulating this redefinition without public notice and supporting evidence required by law. It also consisted of the Secretary of OSHA encouraging action by Vanderbilt (self-certification) which would impede the enforcement of the asbestos standard by discouraging talc users from voluntary compliance with the standard.

7. Despite Vanderbilt's certification of the absence of asbestos in its talc, encouraged by OSHA's leaders, asbestos has indeed been found by NIOSH and OSHA field compliance staff, and confirmed by an administrative judge.

8. NIOSH privately objected to OSHA's illegal actions, but nonetheless consented to conduct a full-scale, two-year study of Vanderbilt talc, while OSHA's temporary relief to Vanderbilt remained in effect and workers continued to be exposed.

9. The United Steelworkers, who represent miners at Vanderbilt, have been kept silent on this issue by the threat of the company closing and jobs being lost.

10. OSHA's illegal relief to Vanderbilt has been called "temporary," pending the outcome of the NIOSH study of Vanderbilt talc. But OSHA recently prolonged the study by calling in a third agency--the National Bureau of Standards--to reanalyze the content of talc samples already analyzed by NIOSH.

11. As the result of the above facts, three groups--the talc miners, the workers in plants where the talc is used, and the consumers who use the talc in household repair products such as spackling compounds--have been needlessly exposed to high levels of asbestos for three years while OSHA inhibits enforcement of its own standard.

Introduction

Under constant political pressure, the Occupational Safety and Health Administration for three years has granted a major talc producer illegal "temporary relief"¹ from OSHA's asbestos standard, resulting in the exposure of large numbers of workers and consumers to high levels of the mineral tremolite, defined by OSHA as a form of asbestos.

Tremolite composes up to 70 percent of the industrial-grade talc² produced by the R.T. Vanderbilt Company, Inc., of Norwalk, Connecticut, at its mines in upstate St. Lawrence County, New York.

Tremolite is one of six minerals classified by OSHA under the common name "asbestos,"³ the most prevalent being chrysotile. At Vanderbilt's urging in 1974, without the public comment period or opportunity for a hearing, or scientific rationale required by law, OSHA significantly revised its definition of "asbestos fiber,"⁴ in an effort to exclude tremolite from any fiber count taken for enforcement purposes.

As further illegal "relief" to Vanderbilt, former Secretary of OSHA John Stender wrote the company: "You may certify to your customers that the talc does not contain asbestos," without proving that claim to OSHA or anyone else.⁵

Dr. Morton Corn, present Secretary of OSHA, continues Stender's illegal policy toward Vanderbilt, though asbestos has been found in the talc by the National Institute for Occupational Safety and Health (NIOSH), an administrative law judge, and OSHA's own field compliance staff.

Studies by Dr. Morris Kleinfeld, former director of the New York

State Division of Industrial Hygiene, show a lung cancer rate of four times the national average among a group of talc miners and millers in upstate New York⁶, most of whom worked in mines now owned by Vanderbilt.⁷ Dr. Irving Selikoff of the Mt. Sinai School of Medicine recently predicted that, absent a major health breakthrough, forty per cent of those who have worked regularly with asbestos will die of cancer in the next half century, based on his studies of asbestos insulation workers who handle chrysotile asbestos.⁸ Even if the form of asbestos in Vanderbilt's talc proves less deadly than that used by insulation workers, the medical risks remain high.

Who is Exposed?

Three groups bear the risk of exposure to asbestos from Vanderbilt talc: miners and millers who remove the talc from the ground and package it; workers who use Vanderbilt talc in a myriad of industrial processes; and consumers, who might breathe in the dust while doing spackling or sanding in the home.

At the mines, Vanderbilt employs roughly 170 people. A NIOSH report on Vanderbilt's Number 1 Mine in November 1975, found:

Time-weighted average asbestos fiber exposures in excess of the present occupational standard of five fibers*...were observed for the following job categories: mine crusher operator, trammer, mine cageman, mill foreman, mill labor, crusher operator, Hardinge Operator, Wheeler operator, packer.

Short term exposures of over 10 fibers were found in many of these same jobs.⁹

Though MESA, not OSHA, has jurisdiction over inspection of mines and mills, OSHA has the ability to focus attention on the

*A fiber is defined as a particle longer than five micrometers. Five fibers means five fibers per cubic centimeter.

asbestos danger from the talc, and thus exert pressure for better working conditions for miners, plant workers and consumers alike.

The number of workers and consumers exposed to Vanderbilt talc after it leaves the mines is more difficult to measure. For Vanderbilt talc is used extensively in many products, including: paint (as a filler and carrier for extenders); putties and spackling compounds (sometimes sold in powdered form for use around the home); ceramic tile (to reduce shrinkage and moisture expansion); tile glaze and flux; electrical insulators; and pottery artware.¹⁰

Listed by the Interior Department as one of the top ten talc producers in America,¹¹ Vanderbilt has claimed as customers: Borg Warner, PPG, 3M Company, Arnesto Paints, Fortune Industries, and Standard T Paint Company, a subsidiary of Montgomery Ward.¹²

At least two government inspections have demonstrated excess exposure to asbestos in plants using Vanderbilt talc. Air samples at Borg Warner's Mansfield, Ohio, plant in 1974 showed exposures up to 80 fibers/cc (16 times greater than the allowable standard) where employees used Vanderbilt talc to "dust" toilet bowls being manufactured. The company was cited for several serious violations of the asbestos standard.¹³ Samples taken at Fortune Industries in Chelsea, Michigan, in 1973 found asbestos concentrations of 33 and 38 fibers/cc (6 to 7 times above the standard) where workers were dumping Vanderbilt talc into a hopper for mixing.¹⁴

If government studies now under way confirm Dr. Kleinfeld's findings of increased disease rates from high exposure to tremolitic

talc, then the illness or death of workers illegally exposed to Vanderbilt talc for the last three years must lie on the heads of those who have perverted the regulatory system.

Money to Politicians

To obtain and keep its "temporary relief" Vanderbilt enlisted the aid of at least three United States Senators and two Representatives. They were Senator James Buckley and Congressman Robert McEwen of New York State; Senator Wendell Ford of Kentucky; the late Congressman Jerry Pettis of California; and Senator Lowell Weicker of Connecticut. Buckley, McEwen and Weicker each received \$300 campaign contributions from Hugh B. Vanderbilt, company president, in the closing weeks of this year's election.¹⁵

Political pressure took the form of meetings, letters and phone calls with OSHA and NIOSH personnel by the elected officials and their aides, all of whom represent districts where R.T. Vanderbilt conducts business. Buckley and McEwen seemed the most active supporters of Vanderbilt, with Ford taking the leading role in recent months. Weicker apparently played only a small part. Ironically, Buckley's reduced activity on Vanderbilt's behalf in recent months corresponded with his late, election-year support of a group of ex-talc workers seeking compensation for lung disease contracted over years in the talc mines.¹⁶

Who is Responsible?

Regardless of political pressure, OSHA Secretaries John Stender and Morton Corn bear the ultimate responsibility for the illegal OSHA relief to Vanderbilt. But top aides to the secretaries also share

responsibility for wrongdoing. These include Daniel Boyd, then director of Standards Development, and Gerald Scannell, then director of the Office of Standards. Scannell now heads the Office of Federal Agency Safety Programs, while Boyd has left OSHA.

Also at fault is the leadership at NIOSH, the National Institute for Occupational Safety and Health, who agreed to study the content and medical effect of Vanderbilt talc while OSHA in effect suspended the asbestos standard for Vanderbilt.

One of NIOSH's chief investigators in the case, John Dement, says he considers the Kleinfeld study alone to be sufficient evidence of the danger of tremolitic talc.

Reviewing existing medical literature, Dement wrote recently: "These studies provide more than substantial evidence that exposure to talc containing tremolite and anthophyllite (another asbestos mineral present in Vanderbilt talc) may pose a serious respiratory health hazard".¹⁷

Yet NIOSH's then-acting Director, Edward Baier, and present Director John Finklea have turned their agency into a vehicle for delaying enforcement of the legally constituted standard. Instead of refusing to participate in the restudy of Vanderbilt talc while OSHA's temporary relief remained in effect, Baier merely wrote a critical private memorandum to OSHA and went along with the study, rather than pressing for enforcement.

United Steelworkers Are Silent

Further fault can be found with the United Steelworkers of America, who represent the 170 employees at Vanderbilt's talc mines. The USWA knew of Vanderbilt's political campaign at OSHA almost

from the start. But the union remained silent, afraid that if Vanderbilt talc were treated as asbestos, manufacturers would stop buying the talc, the mines would close, and jobs would be lost.

Vanderbilt played on this fear in a particularly outrageous presentation to NIOSH and USWA representatives this summer:

"The United Steelworkers Union, I am sure, is as interested in the health of its members at Gouverneur, New York as is the R.T. Vanderbilt Company....But I would be remiss if I did not point out that the relentless accusations of high asbestos content in our talcs....continues to take its toll and to jeopardize the jobs of our workers."¹⁸

With the Steelworkers neutralized by industrial blackmail, Vanderbilt talc has spewed out of the mines without caution labels and with "safety certifications" to factories across the country, where an untold number of workers are exposed.

If the powerful United Steelworkers of America will not force the government to enforce its laws, then who will?

The "Temporary Relief"

Let us now look more closely at the ingenuous, but illegal "temporary relief" granted by OSHA to Vanderbilt.

Background

OSHA promulgated an asbestos standard in July 1972, limiting the amount of asbestos to which employees may be exposed.

The standard, which has the force of law, defines asbestos as any one of several fibrous minerals, including: Chrysotile (the most common form of asbestos), amosite, crocidolite, tremolite, anthophyllite and actinolite. It defines an asbestos fiber as a fiber "longer than 5 micrometers".¹⁹

Vanderbilt missed its opportunity to comment on the standard before it became law, "not realizing" that its talc would be affected.²⁰

In the summer of 1973, however, Vanderbilt worried that the asbestos standard would hurt its sales. This concern coincided with release of a NIOSH Health Hazard Evaluation of Fortune Industries in Chelsea, Michigan. The report found that concentrations of tremolite from Vanderbilt talc used by Fortune exceeded the asbestos standard and advised the company: "Use a non-fibrous material in place of the tremolite. This is currently being looked into and several substitute materials will be tried".²¹

The enforcement threat to Vanderbilt was not direct, since MESA, the Mining Enforcement Safety Administration, not OSHA, holds jurisdiction over mines. Instead, the threat was that Vanderbilt's customers would seek substitute ingredients rather than install expensive devices to reduce dust in their factories.

Vanderbilt's Tactics

After meeting with aides of Congressmen McEwen and Pettis, Vanderbilt petitioned OSHA in July 1973 to modify the asbestos standard.²²

The company's petition had three arguments: 1) tremolite is not usually found in fibrous form and the non-fibrous form should be excluded from the asbestos standard; 2) evidence linking tremolitic talc with an increase in death and disease is weak; 3) the asbestos standard would force Vanderbilt to go out of business.

Despite heavy political pressure, NIOSH and lower level OSHA

officials recommended rejection of Vanderbilt's petition, arguing simply that if Vanderbilt talc contained no asbestos, then no fibers would show up in a fiber count and the company had nothing to fear.²³

When the petition reached Gerald F. Scannell, Director of the Office of Standards, however, the political lobbying by Vanderbilt and its friends on Capitol Hill paid off.

For, while seeming to reject Vanderbilt's petition, Scannell tacked on this paragraph to his letter of December 26, 1973, to Vanderbilt's lawyer:

"Therefore, R.T. Vanderbilt, Incorporated and International Talc Company Incorporated should take the necessary air samples and make a determination as to whether or not their tremolitic talc is subject to the asbestos standard. They may advise their customers of these tests."²⁴

In other words, the company could self-certify its product as safe. Not surprisingly, Vanderbilt replied: "We are advising our customers by letter on January 15, that our talc products used in their manufacturing processes are not subject to the asbestos standard."²⁵

The "temporary relief" had begun.

Vanderbilt's Problems Increase

Vanderbilt increased its pressure on OSHA for more definitive action in the first half of 1974. By July, Secretary of OSHA John Stender urged his staff to give "priority attention" to the company.²⁶

Vanderbilt's business problems also increased, though one wonders how "fatal" Vanderbilt really considered them, for in May 1974, at the height of its supposed crisis with OSHA, Vanderbilt purchased

most assets of the neighboring International Talc Company in St. Lawrence County. The reported purchase price was \$5.5 million.²⁷

In July 1974, an OSHA field inspector visited Borg Warner's plumbing fixtures plant in Mansfield, Ohio, and found "serious violations" of the asbestos standard resulting from use of Vanderbilt talc.²⁸

Soon afterwards, Standard T Paints, another customer, showed signs of dropping its account with Vanderbilt:

A Vanderbilt salesman wrote this revealing internal memo:

"[Standard T's buyer] is aware of the work we have done and are continuing to do [presumably lobbying with OSHA] and this is the main reason why more emphasis hasn't been placed on the laboratory to try and replace Nytais [trade name for Vanderbilt talc]....They do not want to handle any asbestiform material in their plants and should Nytal come under that category it would mean about a 2.5 million pound [sales] loss at this location."²⁹

At this, Vanderbilt became panicky and wrote to OSHA: "We may lose this very important account unless we get fast action".³⁰ They soon got it.

Self-Certification

On October 4, 1974, Daniel P. Boyd, Director of Standards Development, submitted a crucial memorandum to Secretary Stender, suggesting that "relief should be granted on a temporary basis to the Vanderbilt Company..." "allegedly avoiding the need to hold public hearings".³¹

The relief urged by Boyd paralleled that granted by Gerald Scannell in his letter to Vanderbilt almost a year earlier. Boyd wrote:

"Based on the company's knowledge of each talc ore mined and on scientific evidence that it does not

contain any fibrous, asbestiform minerals, the Company will be permitted to certify to its customers that the talc does not contain asbestos." (emphasis added)

But Boyd went further. He urged the Secretary to order his field compliance officers not to treat Vanderbilt's talc as asbestos:

"The next step necessary is to insure that OSHA field personnel understand your position. Compliance officers should be told in words to this effect that when an organization has scientifically proven and certified that their talcs, prior to processing or milling or crushing, do not contain fibrous or asbestiform tremolite, anthophyllite, actinolite or other asbestiform minerals, then compliance officers should in turn not treat that material as asbestos."

Thankfully, Stender did not follow Boyd's shocking advice about ordering compliance officers to overlook violations of the asbestos standard, though Vanderbilt at a recent meeting tried to hold OSHA to this "bargain".³²

Unfortunately, however, Stender accepted Boyd's "self-certification" program and issued a letter to Vanderbilt to that effect on October 9, 1974.³³

Vanderbilt immediately wrote to Borg Warner (the company which had been cited for a serious asbestos violation):

"In accordance with procedures laid down by the Occupational Safety and Health Administration of the U.S. Department of Labor in a letter of October 9, 1974, to the R.T. Vanderbilt Company, Inc., we hereby certify that our product NYTAL 200 does not contain asbestos."³⁴

This created an unseemly scene between Borg Warner's safety manager William Steins and OSHA's director of the Toledo Area Office, Glen Butler.

Butler was in a quandary. On the one hand, an officer of his own staff had measured unacceptable levels of asbestos in Borg Warner's

plant. On the other hand, Borg Warner waved a letter purporting to give the company a safety certification via the Secretary of OSHA, himself.

As a participant at the meeting describes it: "Mr. Butler decided not to vacate the citation....The meeting ended with Mr. Steins promising to 'see us in court'."35

The case went to court and Occupational Safety and Health Review Commission Judge Jerry W. Mitchell ruled against the company. The judge said, in short, if the substance is tremolite and if it is five or more microns long and three times longer than it is wide, then it is an asbestos fiber, by law. (Docket 10757 OSHD 20, 947, June 28, 1976)

Such an opinion and even the OSHA inspection which began the case must be considered a small deterrent for most users of Vanderbilt talc, however. For OSHA employs only 175 trained health inspectors to police over 4 million workplaces in the country.

Lulled by a certification letter from Vanderbilt, most users of Vanderbilt talc would most likely keep on using it without even considering obeying the asbestos regulation; unless they were caught by an OSHA inspector.

Fiber Redefined Illegally

Following his October 9, 1974 letter to Vanderbilt, Stender had his staff prepare Field Information Memorandum (FIM) 74-92, redefining asbestos fibers in an attempt to eliminate tremolitic talc from an asbestos fiber count. The FIM was released November 21, 1974.

Vanderbilt had petitioned in 1973 for a length-to-width ratio

of 10:1 as compared with the 3:1 being used by OSHA and by NIOSH scientists.

This would have eliminated most tremolite from fiber counts for enforcement purposes, since tremolite tends to occur in shorter and thicker form than some other types of asbestos.

Interestingly, standards director Boyd, who recommended "self-certification," advised against a redefinition of the asbestos fiber, writing:

"We could not recommend such unilateral action for this talc company, since it would be contrary to the OSHA asbestos standard. Such change should be made through formal rule-making procedure...."³⁶

Nonetheless FIM 74-29 set the new ratio at 5:1 and added four more elements to the definition of a fiber: a maximum diameter of three microns; a fibrous rather than a crystalline or sliverous appearance; a maximum length of 200 microns; and a fibril or "bundle of sticks" effect unless the fibers are in the non-divisible stage.

All this was done without the opportunity for public comment, public hearing, or a reasonable justification based on the best available evidence, all required by law.³⁷

In plain terms, OSHA must allow interested persons a chance to comment on any proposed modification of a standard, unless the change is minor--and even then OSHA must explain why the change is considered too minor for comment.

OSHA's action on Vanderbilt tale violates both section 6 (b)(2) of the Act and Regulation 1911.5 of Title 29, Code of Federal Regulations.

Though clearly illegal, FIM 74-92 remains in effect today. NIOSH, however, does not follow FIM 74-92, and continues to measure asbestos fibers as over 5 microns with a 3:1 width to length ratio. Thus NIOSH, following the law, still calls tremolite asbestos.

NIOSH Objects in Private

NIOSH bitterly but privately complained that OSHA's illegal standard changes would "reduce worker protection".³⁸ Acting Director Edward Baier wrote to OSHA: "The stipulation that "crystals", even though they meet the asbestos criteria, not be counted has no foundation concerning health effects. Also no evidence has been offered to suggest that the definition of a fiber should be changed to include a five-to-one aspect ratio instead of the presently accepted three-to-one ratio."

"Because this would significantly change the content of the asbestos standard, the change must be formally proposed and promulgated under Federal rule-making procedures," Baier continued. "Unless sound evidence can be provided to support the change, the change will be susceptible to legal challenge."

Discussing Stender's letter to Vanderbilt, Baier noted, "The institute considers this to be an unsatisfactory solution because

there is no requirement of the company to provide supporting evidence to MESA, OSHA, NIOSH or other experts for confirmation" (emphasis added).

NIOSH Investigates

Despite objections to OSHA's protection of Vanderbilt, NIOSH agreed to participate in a full-scale study of the hazards of Vanderbilt's talc, while OSHA's protection remained in effect.

Vague references had been made to a NIOSH study for several months, but the plan began in earnest in early 1975.

NIOSH researchers planned to screen medical records of all former employees of Vanderbilt and its predecessors; to examine the medical condition of present employees; and analyze the content of Vanderbilt talc samples.³⁹

On its face, the study meant to resolve issues raised by Vanderbilt in its petition--whether or not tremolitic talc causes disease; whether or not tremolite is asbestos.

However, when coupled with FIM 74-92 and Stender's "self-certification" policy, the NIOSH study became another means to delay enforcement of the asbestos standard.

The asbestos standard became law after a long process of public comment and debate. To effectively suspend enforcement as soon as one company questions the law, and to make the government prove the law valid, turns the legal system on its head.

Yet, by agreeing to investigate Vanderbilt while OSHA effectively suspended the asbestos standard for Vanderbilt and its customers, NIOSH joined the illegal procedure begun by OSHA.

What makes NIOSH's action worse is that at least one of its

chief investigators, as we have seen, fully believes that existing medical evidence already justifies inclusion of Vanderbilt's talc⁴⁰ under the asbestos standard.

Not surprisingly, a preliminary NIOSH report on one mine and mill in November 1975 showed, "numerous operations in both the mine and mill to have excessive exposures to airborne fibers," and noted, "While results of ongoing NIOSH health effect studies of workers in these operations are not yet available, these fiber levels are of such magnitude to warrent concern."⁴¹

When the Watertown (New York) Daily Times published a story on the NIOSH report,⁴² Vanderbilt accused NIOSH of the unique offense of "hiding behind the Freedom of Information Act" by releasing the report to the press.⁴³

This fall NIOSH visited Vanderbilt's mines to conduct medical examinations of current employees. A final report is expected within months.

Meanwhile, however, the third phase of NIOSH's study--mineralogical analysis of Vanderbilt talc--has been removed from NIOSH control. At the request of Dr. Corn, eighty talc samples are now in the hands of a third agency--the National Bureau of Standards--for reanalysis.⁴⁴ And more delay!

NBS estimates its study will take four man-months and cost \$25,000.⁴⁵ Further delay and more "temporary relief" for Vanderbilt.

Typically for this case, a senatorial aide, this time from Senator Wendell Ford's office, sat with Dr. Corn when he made the decision to call in the National Bureau of Standards.⁴⁶ Edward Baier, of NIOSH called the move "highly unusual."⁴⁷

What's worse, Dr. Corn originally asked NBS to devise a complete

redefinition of asbestos while Vanderbilt's temporary relief
48
remained intact.

But the bureau protested that a total redefinition would take three man-years, \$225,000, and require input from several other agencies.⁴⁹

Corn agreed reluctantly to put off the redefinition, noting however, "Even after conclusion of (the NBS) analysis there are those who may challenge the current methodology."⁵⁰

Looking at the bright side, however, Corn added, "We will be in a better position to provide relief to those being exposed to asbestos if there is at least consistency of analysis." But one wonders: Why does Dr. Corn need a "better position" to begin enforcing the standard that has been law since 1972?

Incidentally, this is an OSHA secretary's first known reference to the problems of workers who are exposed to the talc, as opposed to the problems of the company which produces the talc.

OSHA Standards Writers Disagree

Already opposed by NIOSH, by OSHA field compliance staff, and by an administrative law judge, Vanderbilt received a severe jolt late last year when OSHA's standards writers repudiated FIM 74-92.

A proposed new standard, released last October, continues to classify tremolite as asbestos, and defines "asbestos fiber" as "a particulate form of asbestos, longer than five micrometers, with a length to diameter ratio of at least three to one, and with a maximum diameter of five micrometers."⁵¹

This new proposal badly upset Vanderbilt, which responded with

more meetings and more political pressure on OSHA.

To date, however, PIM 74-92 stands, as does Stender's letter to Vanderbilt. The proposed standard is nowhere near becoming law.

* * * * *

The above report touches just the highlights of the Vanderbilt story. The file of correspondence and reports on the matter is more than three inches thick. For some further details, please refer to the time line which follows.

Sequence of Events

Two years have passed since OSHA issued its "temporary relief" to the R.T. Vanderbilt Company. Three years since Gerald Scannell of OSHA first suggested that Vanderbilt take its own samples and inform customers of the results. When will this illegal action end? We do not know. But this time-line will explain better how it came about.

July 7, 1972	OSHA's asbestos standard becomes law. Though 64 oral or written comments were made by other interested parties, Vanderbilt remained silent before the standard took effect. Vanderbilt's lawyer later explained that the company did not realize tremolite was being considered as asbestos. ⁵²
June 18, 1973	OSHA's Director of Standards, Gerald Scannell, meets with Vanderbilt representatives and aides of Congressmen Robert McEwen and Jerry Pettis. ⁵³
June 20, 1973	Congressman McEwen writes to OSHA Secretary Stender: "Should these mines be forced to close, you can readily understand that it would have a serious and adverse economic effect in that area." ⁵⁴
July 19, 1973	Vanderbilt petitions OSHA to exclude non-fibrous tremolite from the asbestos standard and redefine the term "asbestos fiber." ⁵⁵
July, 1973	First publicly reported contact between Vanderbilt executives and Senator Buckley's office. A Buckley

July, 1973
(continued) staff aide recently recalled contacts with Vanderbilt going back to 1971 or 1972 and said the Senator's staff has participated in three or four meetings with OSHA or NIOSH concerning Vanderbilt.⁵⁶

August 7, 1973 Scannell informs Deputy Assistant Secretary of OSHA Chain Robbins that "Congressmen McEwen and Pettis have expressed a great concern in this matter."⁵⁷

August-Oct 1973 OSHA personnel have at least five telephone contacts with representatives of Congressmen McEwen and Pettis. They want to know the status of the Vanderbilt petition.⁵⁸

Oct. 24, 1973 McEwen's aide calls to inform OSHA that Vanderbilt has lost two small contracts, a portent of what Vanderbilt foresees as "irreparable financial damage."⁵⁹

Nov. 11, 1973 Political pressure spreads to NIOSH, the supposedly "pure science" branch of occupational health research in the government. Scannell writes to NIOSH Director Marcus Key, "Congress members McEwen and Pettis have expressed a great concern in this matter."⁶⁰

Nov. 21, 1973 NIOSH criticizes Vanderbilt's petition in a memo to OSHA Secretary John Stender, saying that if Vanderbilt talc truly has no asbestos, then the company has nothing to fear from a fiber count in accordance with the standard.⁶¹

Dec. 12, 1973 Dr. Floyd Van Atta, Acting Chief of Division of Health Standards, OSHA, writes, "Based on NIOSH comments, it is recommended that petition be denied."⁶²

Dec. 26, 1973 Scannell denies Vanderbilt's petition, but adds in letter that the company "should take the necessary air samples and make a determination as to whether or not their tremolitic talc is subject to the asbestos standard. They may advise their customers of the results of these tests." This was the first temporary aid given by OSHA to Vanderbilt.⁶³

Jan. 3, 1974 Vanderbilt tells Scannell that the company does indeed plan to tell its customers that its talc contains no asbestos.⁶⁴

Jan.-June 1974 Vanderbilt writes to and meets with NIOSH and OSHA officials urging a reopening of Vanderbilt's petition to exclude non-asbestiform tremolitic talc from the asbestos standard. Congressmen McEwen and Pettis are kept informed.⁶⁵

June 25, 1974 Letter from Vanderbilt to John Stender stating that OSHA and NIOSH have agreed to review the petition, but urgently seeking "temporary" relief in order to protect our markets and protect our company from potentially enormous financial harm.⁶⁶

May 1974 Vanderbilt buys out International Talc, a neighboring operation.⁶⁷

July 2 & 3, 1974 After meeting with Vanderbilt officials, Secretary Stender tells his staff to give "priority attention" to a request for "interpretation" of the asbestos standard.⁶⁸

July 9, 1974 An OSHA inspector finds serious violations of the asbestos standard at Borg Warner's plumbing plant in Mansfield, Ohio. Borg Warner indignantly waved its "certification of safety" letter from Vanderbilt, but Glen Butler, OSHA Toledo Area Director refused to vacate the citation.⁶⁹

August 6, 1974 Secretary Stender makes the first of his off-the-cuff interpretations of the asbestos standard. He tells Vanderbilt that "tremolite" in the asbestos standard means only "non-fibrous tremolite." (FIM 74-67).⁷⁰

Sept. 26, 1974 Vanderbilt, at yet another meeting with OSHA, says Stender's redefinition of tremolite was "a step forward" but not good enough. H.B. Vanderbilt quotes Stender as saying his company is being held "hostage" by the asbestos standard.⁷¹

Oct. 1, 1974 Vanderbilt writes to OSHA: "It now appears that we may lose (a) very important account unless we get fast action."⁷²

Oct. 4, 1974 Daniel Boyd, Director of the Office of Standards, advises Stender to grant Vanderbilt "temporary relief" by letting Vanderbilt self-certify the safety of its talc. Boyd also recommends making Vanderbilt's certification binding on field compliance officers; but Boyd opposes redefining the term "asbestos fiber" without a public hearing.⁷³

Oct. 9, 1974 Stender writes to Vanderbilt, permitting them to certify the safety of their talc without submitting scientific evidence.⁷⁴

Oct. 30, 1974 Director of OSHA's Toledo area office refuses to honor a certification letter sent by Vanderbilt to Borg Warner, in the face of a finding of high levels

Oct. 30, 1974 (continued) of asbestos where Vanderbilt talc is used at a Borg Warner Plant.⁷⁵

Nov. 21, 1974 OSHA issues Field Information Memo 74-92, redefining the term "asbestos fiber" to try to eliminate tremolitic talc from fiber counts.

Jan. 2, 1975 Vanderbilt form letter to customers certifying that several grades of talc contain no asbestos.⁷⁶

Feb. 13, 1975 Private memo from Edward Baier, Acting Director of NIOSH, to OSHA, sharply criticizing FIM 74-92 and Secretary Stender's "self-certification" letter. Baier claims the OSHA action will reduce worker protection, lacks scientific basis, and may be procedurally unlawful.⁷⁷

March 4, 1975 NIOSH official Jon May outlines for Vanderbilt a proposed plan of epidemiological study of Vanderbilt's workers. He tells Vanderbilt that NIOSH study is limited so far to Vermont and New York, seeming to contradict earlier statements by other officials that NIOSH is conducting a nationwide study of the talc industry.⁷⁸

March 5, 1975 OSHA requests NIOSH to analyze 19 Vanderbilt talc samples for asbestos. This had been suggested in February by Dr. Paul Kotin of Johns-Manville, a competitor of Vanderbilt. Kotin enjoys a close relationship with several OSHA officials in Washington. NIOSH accepts OSHA's request.⁷⁹

June 19, 1975 Meeting in Washington between Vanderbilt, Stender, OSHA, NIOSH, the Chamber of Commerce, and representatives of Senator Buckley and Congressman McEwen. (34 persons attended). Vanderbilt successfully pleads for continuation of FIM 74-92.⁸⁰

Summer 1975 NIOSH researchers conduct preliminary studies of Vanderbilt's mining operations.

Oct. 9, 1975 OSHA proposes a new asbestos regulation, still including tremolite in its definition of asbestos and defining an asbestos fiber as longer than five microns, with a three:one length-width ratio. This is a repudiation of FIM 74-92 and a setback for Vanderbilt, but it has no immediate effect since that standard is still just a proposal.⁸¹

Nov. 24, 1975 Senator Lowell Weicker writes to Secretary of Labor Dunlop forwarding an appeal from Vanderbilt. Weicker states: "If the points Mr. Vanderbilt raises . . . are indeed questionable, then it would appear that this is a problem with need of prompt resolution." (Part of public comment file on the proposed new asbestos regulation).

Dec. 18, 1975 Senator Buckley calls a meeting to determine the status of Vanderbilt's case. His aide attends, with people from OSHA, NIOSH and MESA. No conclusions are reached.⁸²

April 9, 1976 New York State Commissioner of Commerce John Dyson submits comments on the proposed asbestos standard. He stresses the serious impact of the possible closing of Vanderbilt's mines in New York if the asbestos standard is applied to its talc.⁸³

May 25, 1976 NIOSH prepares a "Progress Report: Industrial Hygiene Study, Gouverneur Talc Company Number 1 Mine and Mill." Copies go to Vanderbilt, Sen. Buckley, and The Watertown Daily Times, on a Freedom of Information request. Excess exposure to asbestos dust was recorded for many employees, though hygiene conditions were described as "above average" for talc operations.

June 25, 1976 Vanderbilt, NIOSH and United Steelworkers representatives meet in Cincinnati to discuss Vanderbilt's scientific evidence that its talc does not contain asbestos. Vanderbilt admits low levels of fibrous anthophyllite, but denies the presence of any fibrous tremolite. NIOSH and Vanderbilt trade charges that the other side is ignoring evidence. The Steelworkers take a neutral role. Vanderbilt warns the steelworkers that more adverse publicity will endanger jobs.⁸⁴

July 16, 1975 Vanderbilt accuses NIOSH of "hiding behind the Freedom of Information Act" to leak negative information to the press.⁸⁵

July 20, 1976 John Dement, of NIOSH, answers Vanderbilt's criticism, noting, inter alia, that existing research studies "provide more than substantial evidence that exposure to talc containing tremolite and anthophyllite may pose a serious respiratory health hazard."⁸⁶

Aug. 18, 1976 Meeting between Dr. Corn, Secretary of OSHA, and people representing Vanderbilt, NIOSH, and Senators Buckley and Wendell Ford. Dr. Corn hears evidence from NIOSH and Vanderbilt on the question of whether the talc contained asbestos. Finally Dr. Corn decides to send the talc to the National Bureau of Standards for a determination. Vanderbilt accuses OSHA of "not living up to its side of the bargain" by letting compliance officers cite Vanderbilt customers for violations of the asbestos standard.⁸⁷

Sept-Nov 1976 OSHA and NBS negotiate over NBS analysis of Vanderbilt talc. Secretary Corn originally wants NBS to define

Sept.-Nov. 1976
(continued)

asbestos. But NBS rejects that request as too costly and time consuming to do alone. The agencies agree to a \$25,000, four-man-month analysis of 80 talc samples.⁸⁸

Oct. 1976

Hugh B. Vanderbilt, President of R.T. Vanderbilt, contributes \$300 each to the campaigns of Senator James Buckley, Senator Lowell Weicker and Representative Robert McEwen.⁸⁹

Conclusions

The R.T. Vanderbilt incident is important in itself and important as a case study of regulatory abuse.

To resolve the immediate problem, we propose the following steps:

a) The immediate revocation of Field Information Memorandum 74-92 (the redefinition of an asbestos fiber); and the Stender letter to Vanderbilt of October 9, 1974 (the self-certification plan).

b) Personal written warnings to all users of Vanderbilt talc that the talc contains asbestos and must be handled in compliance with the asbestos standard.

c) Top priority inspections of all plants using Vanderbilt talc.

d) An investigation of the headquarters staff of OSHA and dismissal of those officials who recommended or undertook improper actions regarding Vanderbilt.

In broader terms, the Vanderbilt incident highlights the need for procedural reform within OSHA.

Contact between OSHA and industry occurs almost entirely outside the public view. Vanderbilt, for instance, has been able to virtually camp outside (and inside) the Secretary's door for four years without attracting notice from the public or the press.

Constant private contact with industry is not the way for OSHA to fulfill Congress' mandate "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions...."

If OSHA officials do meet with industry, the meetings should be open to the public and fully publicized. Meetings with workers or

their representatives, or with Congressmen should also be public.

A second area for procedural reform is OSHA's standards modification and interpretation process.

Presently, when OSHA receives a request for standards modification or interpretation, such as Vanderbilt submitted, there are three options: a) treat it as a petition for rulemaking under Section 6 of the Act, and begin a thorough publication, comment and hearing procedure; b) treat it as a request for a minor change with an explanation why it is minor; c) answer the request for modification or interpretation by a private letter without any public notification.

Understandably, OSHA officials tend to favor the quickest and simplest route--the private answer. This is a proper procedure if the inquirer merely seeks an explanation of a standard. But sometimes the line between interpreting or expanding a standard and merely explaining it is a fuzzy one. Sometimes these difficult categorizations are hastily and mistakenly made without enough thought.

Sometimes, as in Vanderbilt's case, requests for major standards modification are seemingly deliberately miscategorized by OSHA as inconsequential requests for standards explanations, in order to keep OSHA's illegal relief out of the limelight of public scrutiny.

Public scrutiny will not solve all OSHA's problems, but it might have averted the illegal Vanderbilt incident, and others like it yet to see daylight.

4. 5 8.

Glossary

Field Information Memorandum (FIM 74-92)--OSHA's announcement to its field staff that the definition of an asbestos fiber was changed pending completion of a study by NIOSH.

Stender Letter of October 9, 1974--A letter from Secretary of OSHA John Stender to the R.T. Vanderbilt Company encouraging improper self-certification that the company's talc contained no asbestos.

Tremolite--One of six related minerals included in OSHA's definition of asbestos.

Chrysotile--The most common form of asbestos, used in insulation.

OSHA--The Occupational Safety and Health Administration, which has jurisdiction over plants where Vanderbilt talc is used in industrial processes.

MESA--The Mining Enforcement and Safety Administration, which has jurisdiction over the mines and mills which produce talc.

NIOSH--The National Institute for Occupational Safety and Health, which is conducting a study of mineral content and medical effect of Vanderbilt talc. NIOSH, a branch of HEW, has no binding power over a workplace or another federal agency. It is advisory.

Footnotes

- ¹ This phrase comes from a memorandum for John Stender, through Howard J. Schulte, from Daniel P. Boyd, Director, Office of Standards Development, October 4, 1974; and a letter from H.B. Vanderbilt to Secretary of OSHA, John Stender, June 25, 1974.
- ² Mineral Product Safety Data Sheets for R.T. Vanderbilt Products, supplied to NIOSH by Vanderbilt.
- ³ Asbestos Health Standard, 29 C.F.R. 1910.1001 (a). Formerly 1910.93.
- ⁴ Field Information Memorandum 74-92, "Tremolite and Talc", November 21, 1974.
- ⁵ Letter from Secretary John H. Stender to H.B. Vanderbilt, October 9, 1974, distributed with FIM 74-92.
- ⁶ Kleinfeld, Mortality Experience of New York Talc Miners and Millers, in Proceedings of the Symposium on Talc, Washington, D.C., May 8, 1973; Kleinfeld, Messite, Kooyman, and Zakl, Mortality Among Talc Miners and Millers in New York State. AMA Archives of Environmental Health, v. 14, 1967, pp. 663-667; Kleinfeld, Messite, and Langer. A Study of Workers Exposed to Asbestiform Minerals in Commercial Talc Manufacture, Environmental Research, v. 6, No. 2, June 1973, p. 132.
- ⁷ Telephone conversation with H.B. Vanderbilt and C.S. Thompson, of R.T. Vanderbilt, October 21, 1976.
- ⁸ Paper delivered by Dr. Irving J. Selikoff, Director of the Environmental Sciences Laboratory of the Mount Sinai School of Medicine, September 8, 1976, as reported in the Washington Post, September 9, 1976, p. A3.
- ⁹ Progress Report: Industrial Hygiene Study, Gouverneur Talc Company, prepared by John M. Dement, May 25, 1976, NIOSH.
- ¹⁰ See footnote 9. Also, letter to R.C. Bacon of Vanderbilt, from J.V. Fitzgerald, of the Tile Council of America, July 18, 1973.
- ¹¹ Preprint from the 1974 Bureau of Mines Mineral Yearbook, "Talc, Soapstone and Pyrophyllite", p. 3.
- ¹² Letter from H.B. Vanderbilt to Howard Schulte, Deputy Assistant, Secretary of OSHA, September 26, 1974. Letter from R.C. Bacon, Assistant to the President of Vanderbilt, to Howard Schulte, October 1, 1974.

- 13 Borg Warner Corporation, OSHRC Docket 10757, Decision filed by Judge Jerry W. Mitchell, June 28, 1976, OSHD 20,947. Memorandum--Status of Brennan v. Borg Warner, from Dennis Dowdell Jr., Trial Attorney, DOL.
- 14 Health Hazard Evaluation Report 72-43-57, Fortune Industries, Chelsea, Michigan, July 1973, NIOSH.
- 15 Records of the Federal Election Commission. Contribution on 09/07/76 to Friends of Jim Buckley; Contribution 10/14/76 to Citizens for McEwen; Contribution 10/18/76 to Weicker's campaign. Senator Ford was not running.
- 16 Article in Watertown Daily Times, "Senator Buckley Hopes to Aid Talc Miners", 5/3/76.
- 17 Letter from John Dement of NIOSH to Harvey of Vanderbilt, July 20, 1976.
- 18 "Statement by R.T. Vanderbilt Company, Inc., at the Meeting in Cincinnati, Ohio, June 25, 1976, between NIOSH and R.T. Vanderbilt Company Personnel, and Attended by United Steelworkers of America Personnel."
- 19 Asbestos Health Standard, 29 C.F.R. 1910.1001. Formerly 1910.93.
- 20 "Petition to Modify 29 C.F.R. 1910.93 and C.F.R. 1910.93a", submitted to OSHA by R.T. Vanderbilt, July 19, 1973.
- 21 See Footnote 14.
- 22 Letter to Secretary John Stender from Congressman Robert McEwen, June 20, 1973. See footnote 19.
- 23 Memorandum from Marcus Key, M.D., Director of NIOSH to Secretary Stender, November 21, 1973. Memorandum from Floyd A. Van Atta, Acting Chief of the Division of Health Standards to Joseph LaRocca, OSHA, December 12, 1973.
- 24 Letter from Gerald F. Scannell, Director, Office of Standards, OSHA, to Paul Gibney Jr., Attorney for Vanderbilt, December 26, 1973.
- 25 Letter from R.C. Bacon of Vanderbilt, to Gerald Scannell, January 3, 1974.
- 26 Memorandum from Stender to Howard Schulte, Deputy Assistant Secretary for OSHA, July 3, 1974. Subject: R.T. Vanderbilt Company.
- 27 Articles in the Watertown Daily Times, May 23, 24, 24, 1974.

- 4-
- 28 See footnote 13.
- 29 Enclosure in letter from R.C. Bacon of Vanderbilt to Howard Schulte of OSHA, October 1, 1974.
- 30 See footnote 29.
- 31 See footnote 1.
- 32 "Presentation by Mr. A.M. Harvey, Manager, Technical Development Department of R.T. Vanderbilt Company, Inc., To Assistant Secretary of Labor, Dr. Morton Corn, August 18, 1976, Washington, D.C."
- 33 See footnote 5.
- 34 Letter to Mr. William Steins, Borg Warner, from H.B. Vanderbilt, October 21, 1974.
- 35 Minutes of meeting taken by John Dement, NIOSH, November 12, 1974.
- 36 See footnote 1.
- 37 The Occupational Safety and Health Act of 1970, Section 6 (b)(2) states in relevant part: "The Secretary shall publish a proposed rule promulgating, modifying, or revoking an occupational safety and health standard in the Federal Register and shall afford interested persons a period of thirty days after publication to submit written data or comments."

Section 6 (b)(3) of the Act gives citizens the right to request a public hearing on the standard in question.

Regulation 29 C.F.R. 1911.5 (Minor Changes in Standards) states in relevant part: "Section 6 (b)...is read as permitting the making of minor rules or amendments in which the public is not particularly interested without the notice and public procedure which is otherwise required. Whenever such a minor rule or amendment is adopted, it shall incorporate a finding of good cause to this effect for not providing notice and public procedure." FIM 74-92 was more than a minor change in the standard. Furthermore, even, if it were minor, FIM 74-92 contained no statement of good cause to dispense with administrative procedure.

Section 6 (b)(5) of the Act requires that standards be based on the "best available evidence." Section 6(e) requires the Secretary publish the reasons for promulgating a standard. Regulation 1911.18 requires the Secretary to "show the significant issues which have been faced, and...articulate the rationale for their solution," in the process of publishing a standard.

FIM 74-92 was not based on the best available evidence (or

any evidence at all); nor did it contain a rationale for its implementation. Clearly a court of review would find it an unreasonable exercise of regulatory authority.

- 38 Memorandum from Acting Director, NIOSH, to Associate Assistant Secretary for Regional Programs, OSHA, February 13, 1975.
- 39 Letter from Dr. Jon May, NIOSH, to A.M. Harvey, Vanderbilt, March 4, 1975. Letter from R.D. Dobbin, NIOSH, to Vanderbilt, June 30, 1975.
- 40 See footnote 17.
- 41 See footnote 9.
- 42 Watertown Daily Times, December 18, 1975. "U.S. Agencies Find North Miners Were Exposed to Deadly Dust".
- 43 Letter from A.M. Harvey, Vanderbilt, to Edward Baier, NIOSH, July 16, 1976.
- 44 Letter from Dr. John D. Hoffman, Director, Institute for Materials Research, National Bureau of Standards, to Dr. Morton Corn, OSHA, November 3, 1976.
- 45 Letter from Dr. Hoffman, NBS, to Dr. Corn, OSHA September 23, 1976.
- 46 Conversation with John Wells, aide to Senator Ford.
- 47 Conversation with Edward Baier, NIOSH.
- 48 Letter from Dr. Corn to Dr. Hoffman, September 1, 1976.
- 49 See footnote 45.
- 50 Letter from Dr. Corn to Dr. Hoffman, October 8, 1976.
- 51 40 Fed. Reg. 47652, October 9, 1975
- 52 File of public comments and transcript of hearings on asbestos standard, Technical Data Center, OSHA, Department of Labor Building. See footnote 20.
- 53 OSHA File on Vanderbilt petition, Room N, 3660, Department of Labor; reference in letter from Representative Robert McEwen to Secretary Stender, June 20, 1973.
- 54 See footnote 53.
- 55 See footnote 20.
- 56 Conversation with Donna Davis of Senator Buckley's staff. Article, Watertown Daily Times, December 8, 1975.

- 78 See footnote 39.
- 79 Memorandum from Dr. Bobby Craft, NIOSH, to Schulte, OSHA, April 1, 1975, referring to Memorandum of March 5, 1976, from Schulte to Baier, NIOSH. Letter Dr. Kotin, of Johns Manville, to Schulte, OSHA, February, 11, 1975.
- 80 "Presentation By the R.T. Vanderbilt Company, Inc., To Assistant Secretary of Labor, Mr. John Stender, Industrial Talc-- June 19, 1975, Washington, D.C." Attendance sheet for that meeting. Memorandum on the meeting by Deward Baier, Deputy Director, NIOSH.
- 81 See footnote 51.
- 82 Memorandum for Record from Dr. Jon May, Chief, Criteria Development Branch, Division of Criteria Documentation and Standards Development, NIOSH. December 29, 1975.
- 83 In public file of comments on the proposed new asbestos standard. Number 186, 3 pgs.
- 84 Letter from Marco Vestich, Assistant Director, Safety and Health Department, United Steelworkers of America, to A.M. Harvey, Vanderbilt, March 17, 1976; Letter from Edward Baier, NIOSH, to A.M. Harvey, Vanderbilt, March 18, 1976; Letters from A.M. Harvey to John Dement, NIOSH, April 15, 1976, and June 18, 1976. Letter from Dement to Harvey, July 20, 1976; Minutes of June 25, 1976 meeting between Vanderbilt, NIOSH, and USWA, prepared by John Dement and apparently approved by Vanderbilt. Statement by Vanderbilt at the meeting.
- 85 Letter from A.M. Harvey, Vanderbilt, to Edward Baier, NIOSH, July 16, 1976.
- 86 Letter from Dement to A.M. Harvey.
- 87 Memorandum from John Dement, NIOSH, August 24, 1976. Prepared statement of Vanderbilt at the meeting.
- 88 Letter from Dr. Corn, OSHA, to Dr. Hoffman, NBS, September 1, 1976; reply from Hoffman to Corn, September 23; Corn replies to Hoffman, October 8; Hoffman replies to Corn, November 3, 1976.
- 89 See footnote 15.