



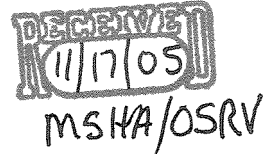
# R.T. Vanderbilt Company, Inc.

INDUSTRIAL MINERALS AND CHEMICALS

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Mine Safety and Health Administration  
Office of Standards, Regulations and Variances  
1100 Wilson Blvd. Room 2350  
Arlington, VA 22209-3939

November 15, 2005



**RE: RIN 1219-AB24: Proposed Rule – Asbestos Exposure Limit**

The R. T. Vanderbilt Company, Inc. (Vanderbilt) supports the key provisions of the captioned rule and notes that the expressed scope of the rule does not include a change in the definition of asbestos. Further, the proposed rule relies upon the Occupational Safety and Health Administrations' (OSHA) asbestos risk assessment which Vanderbilt presumes includes the 1992 OSHA review and ruling on amphibole cleavage fragments (57 FR 24310-24311). For this reason, Vanderbilt had not intended to provide comment beyond that submitted during the ANOPR phase of this rulemaking. Recent submissions into the rule making record, however, prompt additional comment.

Several submissions encourage the Mine Safety and Health Administration (MSHA) to broaden the definition of asbestos to include elongated amphibole cleavage fragments, if not during this rule making, during a subsequent MSHA rulemaking. These requests are linked to convenience (the use of simplistic fiber counting criteria to define asbestos and asbestos risk), to risk association (cleavage fragments are observed in asbestos exposures hence they may be equally implicated in the same disease end points) and on theoretical grounds (because of the same chemistry, biopersistent, and of respirable size, elongated amphibole cleavage fragments are assumed to pose the same risk as asbestos). Vanderbilt believes none of these theories are supported by scientific evidence-- however well intended.

The recalculation of non-asbestos material "as asbestos" is no more supported today than it was in 1992 when OSHA addressed the regulation of nonasbestiform anthophyllite, tremolite and actinolite as asbestos. Thus, Vanderbilt cautions MSHA to ensure a thorough review of the science in this area if there is serious consideration to regulating non-asbestos as asbestos in this or any subsequent actions by the Administration. Most, if not all, of the authoritative literature on this subject has been submitted into the MSHA record and is also available through the cited OSHA rule.

Vanderbilt supports the regulation of any mineral particulate as stringently as asbestos if it is shown to pose the same risk. Vanderbilt does not, however, support mineral mischaracterization in the name of convenience or misinformation. Exposures should always be properly identified and called by their proper names. This is critical to accurate and meaningful risk assessment.

AB24-COMM-104



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Since a change in the regulatory definition of asbestos would likely require an updated risk review, coordination with other government agencies and new rulemaking, our comments in this area are cautionary only. Given the impact of asbestos definitional changes, justification would certainly have to be demonstrated.

We also note that several comments submitted into the record allege an asbestos risk for Vanderbilt talc workers. Such allegations are not uncommon because our talc workers play a pivotal role in what is commonly referred to as “the amphibole cleavage fragment issue”. As a result of this focus, Vanderbilt talc is one of the most studied mineral products in the world from both a mineralogical and biologic perspective. Beyond numerous human health studies (both mortality and morbidity), Vanderbilt talc has also been tested in animal and cells studies against asbestos. These studies consistently show no carcinogenic response to Vanderbilt talc (in whole or part) while asbestos, tested under the same test conditions, consistently does.

Since the health experience of Vanderbilt talc workers has once again been raised (presumably to argue for asbestos definitional changes), we would like to call your attention to our prior ANOPR oral testimony. For convenience, we have appended the MSHA transcripts of that testimony. This testimony was provided during the MSHA public hearing held in Canton, New York on May 29, 2002. The object of this testimony was to relay updated health information regarding Vanderbilt talc miners and millers. Supporting documents (listed in the testimony) were provided at that time as well. Vanderbilt believes this testimony speaks directly to those who mistakenly believe exposure to Vanderbilt talc poses an asbestos-type risk (mineralogy issues aside).

Thank you for your attention to this matter.

Very truly yours,

**R. T. VANDERBILT COMPANY, INC.**



John W. Kelse, Corp. Industrial Hygienist  
Manager, Corporate Risk Management Dept.

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# TRANSCRIPT OF PROCEEDINGS

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ASBESTOS LEVELS IN MINING )  
FACILITIES )  
)

Pages: 1 through 60  
Place: Canton, New York  
Date: May 29, 2002

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1 other than 3 to 1, and use populations --

2 MR. PETRIE: Excuse me one second. Can you speak  
3 up a little louder. We have some noise out in the hallway  
4 there. Some of the individuals are having difficulty  
5 hearing.

6 MR. KELSE: Okay.

7 MR. PETRIE: Thank you.

8 MR. KELSE: So at any rate, I will comment on  
9 those questions. But as you heard this morning, for  
10 decades, the ore from this mine has been accused of  
11 containing asbestos, and more importantly, as imposing an  
12 asbestos-like risk.

13 I really won't address the mineral issues,  
14 although I do have some slides. If you want, I can go  
15 through some of those, but I think it's pretty clear by now  
16 that the industrial grade talc that's mined at Vanderbilt  
17 isn't, in fact, an asbestos-containing material. I've left  
18 some supporting documents on that topic.

19 Because it's been suggested that the health  
20 experience of these talc miners reflects an asbestos-type  
21 risk, however, and because regulatory agencies have been  
22 periodically encouraged to regulate it has as asbestos,  
23 whether it contains asbestos or not, it's important to ask  
24 whether the health experience of these miners really is

1 reflective of an asbestos risk, mineralogy aside.

2 So to address that, I brought along some slides.  
3 I'll pretty much stick to a prepared script so I don't  
4 stray. It's all too easy for me to do that. I can go off on  
5 tangents on this topic. I don't want to do that. I want to  
6 keep this to about 20 minutes and run through these slides.

7 First, what I'd like to go over, I'll go over the  
8 facility's pulmonary cancer experience. Remember, I'm  
9 talking about Vanderbilt talc here. I didn't work for  
10 Loomis. I didn't work for International. I don't know what  
11 their experience was. I'm talking about Vanderbilt. The  
12 only talc mining operation currently in this region. There  
13 are no others, just Vanderbilt. Then I'll briefly address  
14 the non-malignant respiratory disease experience.

15 (Slide presentation.)

16 MR. KELSE: This is a very busy table and very  
17 difficult to see. My other slides will be a lot easier to  
18 make out than this. But it's an extremely important slide  
19 because it reflects the most up-to-date breakdown of lung  
20 cancer deaths that we have among everybody that had ever  
21 worked at Vanderbilt talc.

22 MR. PETRIE: If you can excuse me for just one  
23 more second, let me see if we can turn these front lights  
24 off so we can better see them.

1 MR. KELSE: Sure. I don't know if I can focus  
2 that. I'll try.

3 (A short recess was taken at 9:57 a.m.)

4 MR. PETRIE: We'll go back on the record.

5 MR. KELSE: Are we back on?

6 MR. PETRIE: Yes.

7 MR. KELSE: Again, I apologize for this slide.  
8 It's extremely difficult to read, but it does reflect the  
9 most up-to-date breakdown of lung cancer deaths that we  
10 have. This covers anyone who had ever worked in the  
11 Vanderbilt mine or mill for any length of time since its  
12 opening in 1948 through 1989. That's a total of 718 over a  
13 42 year period.

14 Now over the years, there has been no less than  
15 six mortality studies of this relatively small group of  
16 miners. So it pretty much places them among the most  
17 studied miners in the world. The 31 cases listed here does  
18 show an overall excess of lung cancer at approximately two  
19 and a half times the expected rate.

20 This a moderate, but significant excess, and one  
21 that is seen in all of the studies. If you look no closer  
22 than this, you might conclude that the exposure to this  
23 talc, whatever it contains, is likely responsible for these  
24 lung cancer deaths. Just as excessive exposure is linked to

1 lung cancer deaths, the belief that this talc poses an  
2 asbestos-like risk originated from these studies.

3           However, to truly establish a causal association,  
4 you need to look a little closer. And when you do, you'll  
5 see some very interesting things. One of the first things  
6 that jumps out at you is the much higher number of cases  
7 among miners versus millers. That's important because, as  
8 you've heard others mention here, dust exposure over the  
9 years show overall dust levels to be about the same in the  
10 mine and the mill with some historical reports showing  
11 higher dust in the mill.

12           There are slightly more millers than miners, about  
13 15 percent more, who ever worked at this mine. And the  
14 average years worked for both groups is similar. So if the  
15 cancers are linked to the dust exposure, we would expect to  
16 see more cases among millers. But that's not what we see.

17           There is also a very high percentage of cases with  
18 very minimal dust exposure time or tenure on the job. In  
19 fact, 55 percent of all of the cases worked less than a  
20 year. Forty-five percent worked less than six months. And  
21 you'll see cases with one day, four days of exposure to the  
22 talc in their entire working lives.

23           If the dust is so potent as to cause lung cancer  
24 with such minimal exposure -- one day, four days, we would

1 certainly expect to see those exposed longer to show even  
2 higher lung cancer rates, but we don't. In studies of  
3 asbestos workers, we do.

4 Also, smoking histories -- always important  
5 whenever lung cancer is being studied, was obtained for a  
6 case control study. The case control study ran to 1985. For  
7 these lung cancer death, every case was a smoker. For  
8 deaths after 1985, we don't have reliable smoking histories,  
9 but I wouldn't be surprised if every one of those lung  
10 cancer cases were smokers as well.

11 Just as importantly, the researchers found that 73  
12 percent of the non-cancer cases, the controls used in the  
13 study were also smokers. So in other words, we've got a lot  
14 of smokers in this mining population.

15 This table gives you an idea of how prevalent  
16 smoking has been among these miners compared with national  
17 norms. Our smoking records are less reliable prior to 1980,  
18 but I'm sure the rate was equally disproportionate -- about  
19 twice the national average.

20 Some researchers feel smoking alone could not  
21 account for all the excess. Others feel strongly that,  
22 indeed, it could. That it is, in fact, the more plausible  
23 explanation. But whether smoking, in whole or in part, is  
24 the reason for the persistent cancer excess, the next



1 observation, I think, is very key.

2 The most recent mortality study included an  
3 analysis that all prior studies did not. That was an  
4 historical dust exposure assessment. This assessment showed  
5 that the cumulative dust exposure from the lung cancer  
6 deaths was 31 percent below the dust exposure for all  
7 decedents. In other words, we see an inverse dust expose  
8 response relationship that further confirms what was  
9 suggested from the 10-year data, or time on the job  
10 experience.

11 In asbestos exposed workers, those with increased  
12 cumulative exposures do show increased lung cancer rates.  
13 In other words, you do see an exposure response  
14 relationship. You do not see that in Vanderbilt talc  
15 workers.

16 I believe this is about as strong as epidemiology  
17 gets short of a no-excess finding when it comes to  
18 cause/effect determinations.

19 (Slide presentation.)

20 MR. KELSE: This is an interesting slide. Also,  
21 one I need to apologize for. It's very hard to see this.  
22 What this does is compares lung cancer in non-malignant  
23 respiratory disease mortality among Vanderbilt talc workers,  
24 and Vermont talc workers.

1           Now I know it's difficult to compare one  
2     epidemiology study with another, but the comparison here, I  
3     believe, is pretty reasonable. Both groups have similar  
4     number of people; similar exposure years; similar overall  
5     dust levels; silica exposure isn't an issue in either study.  
6     And when you look only at the talc workers in both groups  
7     with more than one year exposure, the overall lung cancer  
8     rate is no different. In regard to non-malignant  
9     respiratory disease, it's actually lower in New York.

10           I put this comparison up because some of the  
11     mineral components in New York talc, incorrectly  
12     characterized as asbestos by some, or just bad as asbestos  
13     by others, aren't present in Vermont. So it doesn't appear  
14     these controversial mineral components make much difference.

15           Incidentally, the moderate lung cancer excess in  
16     Vermont talc workers was not attributed to the dust by the  
17     researchers, which was NIOSH in this case. It turns out  
18     that there was also an inverse exposure response seen in  
19     Vermont. So factors other than the dust were cited as the  
20     likely cause of the lung cancers observed.

21           Well, beyond human mortality studies, it's always  
22     good to have <sup>an</sup> animal study or two that supports or doesn't  
23     support the epidemiology. This table reflects the effects  
24     of a rat pleural implementation study by Moral Stanton of

1 the National Cancer Institute. Dr. Stanton was testing the  
2 theory that morphology particle dimension was most key to  
3 fiber toxicity, if not the only consideration.

4 It turns out that among all the samples Stanton  
5 tested, I believe 72 in all, carefully measuring the  
6 particles in each samples, he tested an off-the-shelf sample  
7 of Vanderbilt talc as well as platy talc. As you see, the  
8 Vanderbilt samples produced no tumors. The Platy talc, just  
9 the background level of no experimental significance.

10 But note the middle column. The Vanderbilt sample  
11 contained some very long, thin fibers like the asbestos  
12 samples. Those fibers are not the elongated, affable  
13 cleavage fragments common in this talc. Those are too short  
14 and too fat. These fibers are talc fibers. They are  
15 relatively rare, but they are observable in Vanderbilt talc.

16 According to Stanton's hypothesis, this sample  
17 should have yielded at least a 60 percent tumor rate, but no  
18 tumors were produced. Some have reasoned that the  
19 Vanderbilt talc didn't produce a carcinogenic response  
20 because there are too few of these fibers in the talc.

21 In the past we responded to that with, well,  
22 maybe. But it is what it is. Still, it is an important  
23 question as it does speak to broader fiber risk issues and  
24 theories. So we did have a cell study conducted with a

1 concentrate of these fibers to be tested against an equal  
2 amount of asbestos.

3 (Slide presentation.)

4 MR. KELSE: Another slide you can hardly read.  
5 The results of that comparison study is reflected here. The  
6 talc concentrate sample acted differently than the asbestos  
7 sample on appropriate cell cultures, which happened to be  
8 rodent tracheal epithelial and pleural mesothelial cells.  
9 Again, suggesting that <sup>more</sup> ~~more~~ dimension is likely involved in  
10 fiber toxicity.

11 I might add that these fibers described as  
12 academic curiosities are not easy to find in the air  
13 samples. Also, although not pertinent to MSHA, this talc is  
14 used in paints and ceramics primarily. The particulate in  
15 this talc is bound in the matrix of these products. <sup>Thus</sup> ~~This~~ - there is  
16 very, very little, if any, public exposure to this material,  
17 unlike vermiculite or platy talc used in talcum powder.

18 These are the results of a second animal study by  
19 William Smith of Fairleigh Dickinson University. Dr. Smith  
20 also tested Vanderbilt talc against asbestos. He even took  
21 a concentrate of the <sup>(non-asbestos form)</sup> non-asbestos form, tremolite, prevalent  
22 in the talc and tested that against tremolite asbestos, the  
23 real thing.

24 The results were the same as Stanton, tumors for

1 asbestos, no tumors for Vanderbilt talc and no tumors for  
2 the tremolite cleavage fragments. The mineral component in  
3 this talc most often confused with asbestos.

4 Knowing that the situation in Libby, in part,  
5 prompted the MSHA rulemaking, it should be noted that  
6 Dr. <sup>Smith</sup> ~~Stanton~~ tested the vermiculite mined in Libby. The Libby  
7 samples produced tumors comparable to the asbestos samples,  
8 while the Vanderbilt samples produced no tumors. That data  
9 is not on this table, and unfortunately, was not published  
10 by Smith. However, it is now public record that a sample of  
11 the vermiculite was provided to Smith, and that he actually  
12 got as many tumors with the vermiculite as he did with the  
13 asbestos samples.

14 Before I switch gears and move to non-malignant  
15 respiratory disease, I'm well aware that several cases of  
16 mesothelioma are said by some to be linked to Vanderbilt  
17 talc. I'm always at a loss as to what to say about that  
18 because I'm not aware of any mesothelioma cases that have  
19 been reasonably linked to this talc. I use the qualifying  
20 term "reasonably linked" because we do know that such cases  
21 have been reported.

22 Two were reported, in fact, in the mortality  
23 studies. In the cases we are aware of, either the diagnosis  
24 was questioned when further investigated, or the latency was

1 far too short to implicate Vanderbilt talc, or there is a  
2 work history of actual asbestos exposure.

3 When this issue was raised during the OSHA  
4 rulemaking in the early '90s, we found that most cases  
5 reported never worked at Vanderbilt talc. One case in the  
6 most recent mortality study, for example, involved a man who  
7 worked for two-weeks in 1948 as a surveyor at the Vanderbilt  
8 site with little, if any, talc exposure.

9 This man then went into the oil business and tore  
10 oil burners out of homes during the '50s and '60s. In  
11 another case only a 15 year latency elapsed from the first  
12 exposure to Vanderbilt talc and death. The latency period  
13 didn't fit. In a more recent case the second pathologist  
14 found the case unlikely to be mesothelioma after reviewing  
15 the tissue and disease process involved.

16 Before we could accept that such a risk is linked  
17 to this talc, we would want the diagnosis confirmed because  
18 it is not an easy diagnosis to make. We would also want to  
19 confirm that the cases are actually linked Vanderbilt talc,  
20 and we would want to know about other possible exposures. I  
21 don't think these expectations are unreasonable.

22 I should also point out that the animal studies,  
23 not the cell study we just discussed, are pleural injection  
24 and implantation studies. Animal studies of this sort are

1 typically viewed as having more to do with pleural tumor  
2 induction or mesothelioma risk than they do with lung  
3 cancer. In these studies Vanderbilt talc did not produce  
4 pleural tumors while asbestos while under the same  
5 conditions did.

6 While I don't think this is a factor here, I also  
7 want to point out that many older mining facilities do  
8 contain real asbestos. Our own talc facility, Vanderbilt,  
9 which was built in the late 1940's is no exception. I found  
10 asbestos-containing installation on boilers, steam lines and  
11 dryers. I've seen asbestos-containing brake linings used on  
12 sh~~u~~sh~~u~~sher machines, asbestos-containing floor tiles. Even the  
13 use of asbestos as a filtering aid in the mine laboratory.

14 Much of this has been removed, encapsulated or  
15 otherwise replaced with non-asbestos material. But it is  
16 important to understand the pervasiveness in older plants.  
17 Something that has nothing to do with the ore itself.

18 This brings me to non-malignant respiratory  
19 disease and the question, do we see a lot of dust-linked  
20 lung disease suggesting that asbestos, or something just as  
21 bad is present. As with the cancer experience, we actually  
22 know a great deal about the pulmonary status of our miners.

23 Radiographs are routinely obtained and date back  
24 to the opening of the mine in 1948. Over the years, they've

1 . been reviewed by many pulmonary specialists. Pulmonary  
2 . testing is also routinely conducted. A very experienced  
3 occupational dust disease pulmonary physician and a former  
4 director at NIOSH has reviewed the chest x-rays and  
5 pulmonary function tests of all our talc workers every two  
6 years for the last 18 years.

7 I think this statement by Dr. <sup>Boehlecke</sup>~~Palick~~, now at the  
8 University of North Carolina School of Medicine, pretty much  
9 cuts to the chase. Please note, if you can read this, that  
10 Dr. <sup>Boehlecke</sup>~~Palick~~ does not feel he is dealing with an asbestos-like  
11 dust risk. Note that he finds very, very little in the way  
12 of pneumoconiosis among these talc workers, and very little  
13 progression when some evidence of dust involvement is  
14 observed.

15 In fact, at the end of 1999, note, he finds only  
16 one worker with evidence of pneumoconiosis. Our most recent  
17 surveillance effort, which we just completed, shows the same  
18 results. Remember, this assessment is from someone who has  
19 actually looked at these talc workers over an extended  
20 period of time. It reflects actual observation.

21 Frankly, I believe our pulmonary experience with  
22 dust is among the best in the mining industry, not the  
23 worst. Dust disease is certainly possible with over-  
24 exposure to Vanderbilt talc, just as it is with durable



1 mineral particulate of a respiral size of any dust.  
2 Certainly some dust like asbestos, or crystalline silica  
3 pose an elevated risk because less exposure is needed to  
4 result in harm.

5           It's important, however, not to improperly  
6 attribute one dust risk to another simply because some level  
7 of risk exist for both. When we do see evidence of  
8 interstitial scarring, parenchymal opacities consistent with  
9 pneumoconiosis, it has almost always been among miners who  
10 had, had previous exposure in other area talc mines now no  
11 longer operated. Smoking has almost always been involved as  
12 well. We do tend to hire miners with prior experience.  
13 It's a double-edged sword, unfortunately.

14           (Slide presentation.)

15           MR. KELSE: This slide underscores the important  
16 of dose or exposure level. You've heard some testimony this  
17 morning about coming home covered in white and your car is  
18 covered in white, and I don't doubt that for a second. When  
19 you compare the dust exposure associated only with the  
20 Vanderbilt mine to the dust exposures associated with other  
21 area talc mines, you can see why miners exposed to these  
22 much higher dust levels might well show dust-linked  
23 problems. Happily, such exposure no longer exists. And  
24 these are exposure levels that go back into the '50s and

1 '60s. It's not yesterday.

2 The Vanderbilt dust levels have to do with the use  
3 of wet drilling and a variety of mill dust controls not  
4 present in these other mines. Not so modern or innovative  
5 today, but certainly in the '50s and '60s, it was a radical  
6 improvement over mining practices at the time.

7 One x-ray finding that some people fail to  
8 differentiate, and wrongly link to asbestos exposure in this  
9 talc mine are pleural plaques. The fact that exposure to  
10 all talc, including cosmetic talc can result in pleural  
11 plaque and thickening is not understood by some physicians  
12 who link this only to asbestos.

13 Plaques are typically seen after 10 or 15 years of  
14 exposure in asbestos mines <sup>as</sup> and well as in talc mines. We do  
15 see this in our talc workers as well in about 4 to 6 percent  
16 of our group. It's important to understand, although this  
17 is one condition all talc exposure share with asbestos.  
18 Pleural plaques are not pre-malignant lesions. Clinically,  
19 they are reported to have nothing to do with the evolution  
20 of mesothelioma or lung cancer. That's a different biologic  
21 process with different end points.

22 These pleural effects are merely a marker of  
23 exposure to talc, or asbestos, and likely other dust as  
24 well. As this table reflects the pleural abnormalities that

1 we do see in our talc workers are not associated with  
2 pneumoconiosis or pulmonary restriction; although,  
3 pronounced pleural thickening can affect pulmonary function.  
4 We don't have any one with pleural thickening. We have seen  
5 a couple of cases in the past, although it was relatively  
6 rare. This underscores the distinction between this pleural  
7 abnormality and actual impairment.

8 In regard to pulmonary function specifically, we  
9 do see a thoroughly high prevalence of mild to moderate  
10 obstructive pulmonary impairment with very little or no  
11 radiographic evidence of an underlying dust involvement. I  
12 think it's pretty clear here that our experience here is  
13 most closely linked to the elevated smoking prevalence that  
14 I mentioned earlier.

15 The amount of smoking that persists among these  
16 miners does bother me. We do offer smoking cessation  
17 assistance. We don't get many takers, unfortunately.

18 I'm very glad that our miners and millers are  
19 among the most studied in the world. I'm glad we've  
20 conducted the type of medical surveillance that we have, and  
21 happy that so many mineral scientists, health researchers  
22 and physicians support us and stand behind us.

23 There are a lot of lessons to be learned from this  
24 seemingly endless saga. This, I believe, <sup>is</sup> ~~are~~ among the most

1 important. Substances should always be called by their  
2 proper name and regulated on the basis of reasonably  
3 demonstrated risks. We need more clarity in our exposure  
4 descriptions, not less. To do less, I believe, actually  
5 compromises worker protection because it obscures our  
6 ability to accurately identify cause/effect associations and  
7 properly attribute current and future risks.

8           When the word "asbestos" is thrown about loosely,  
9 the very survival of a company, people's jobs can be put at  
10 risk when this emotionally charged word is used. It is  
11 important that it be used properly. Prudence to err on the  
12 side of safety is a good thing. Unbridled prudence,  
13 however, can produce witch hunts. Good science is critical  
14 if we wish to minimize bias and control the diversion of  
15 limited resources to lower-level risks.

16           I want to say that there is no question in my mind  
17 that over-exposure to Vanderbilt talc, International talc,  
18 Loomis talc, anybody's talc or just about any durable  
19 respiral particulate can cause problems. We've seen it.  
20 There is no question.

21           The fact that this talc in this region is a very  
22 complex mineral blend. That it is understandable that  
23 people confuse it does not mean that you can attribute, make  
24 assumptions or do circular reason. Well, it contains

1 asbestos so, therefore, it's got to be an asbestos risk.  
 2 Okay, it doesn't contain asbestos, but it seems like we have  
 3 an asbestos risk so, therefore, it's as bad as. So you keep  
 4 going in this circle that never ends. That's why every  
 5 single time -- every time there's a federal -- the record is  
 6 opened by any federal agency to discuss asbestos in any way,  
 7 shape or form, it seems Vanderbilt is at the table.

8 It seems like the door is open and right away,  
 9 everyone rushes in to talk about definitions and changes,  
 10 and maybe they should be considered. But I think you need  
 11 to call substances what they are. If you have a fiber that  
 12 works or acts just as bad as asbestos does, you need to put  
 13 that on the PEL table and say "treat as asbestos," but you  
 14 don't call it something it isn't.

15 <sup>If</sup> The fibrous ~~actinolite~~ <sup>winchite or erionite (fk)</sup> is as bad as tremolite  
 16 asbestos is, you should regulate fibrous ~~actinolite~~ <sup>winchite or erionite (fk)</sup> as  
 17 severely as you regulate asbestos because it's been  
 18 demonstrated to be just as bad. But you don't get a whole  
 19 category, or a group, or blob things together because I  
 20 think that ~~more~~ <sup>more</sup> than fiber dimension is involved. I think  
 21 psycho-chemical properties have a link to this. Nobody  
 22 knows what the actual mechanism of asbestos path in the  
 23 genisicity is.

24 A lot of asbestos workers who die of lung cancer

1 also happens to be smokers. So it's not surprising on our  
2 table just about everybody was, if not everyone was, but  
3 that's not unique. That's also seen among asbestos workers.  
4 It could be that these fibers, because they act almost like  
5 magnets, attracts some of the carcinogens <sup>in</sup> and cigarette  
6 smoke hold the particles, the particles go to the air  
7 exchange region of the lung and then are broken down,  
8 encapsulated, digested, produce active oxygen radicals,  
9 produce cellular diversities that ultimately end in  
10 aberrations that end in cancer.

11 Nobody is absolutely sure, but that's all the more  
12 reason why every single exposure that you look at you need  
13 to very carefully characterize that exposure. It doesn't  
14 mean it's an excuse, or a reason not to regulate or control  
15 it. But it's not an excuse to develop sweeping definitions  
16 and drag all sorts of things in that there's evidence that  
17 they don't act the same way.

18 That's the reason why I felt compelled to come to  
19 this hearing so that it is clear what we know about the  
20 experience of our miners and millers. I don't know what the  
21 experience with Loomis Talc was. I don't know what the  
22 experience at International Talc was. Are some of the areas  
23 that we mined similar to those areas? Yes, they are.

24 Are some of the mines that were operating in the

1 '40s, '50s and '60s still operating? No, they're not. So  
2 you have to look at it today. Even if you believe that the  
3 dust caused excess lung cancer among the miners, the  
4 underground mine was closed in 1995. I don't know really  
5 what more to say about that.

6 I do have slides that do discuss the mineralogy  
7 that shows the difference between cleavage fragments and  
8 asbestos. It shows talc fibers, and things of that nature.  
9 I didn't plan on using those because it's really not  
10 pertinent to the five questions that MSHA asked. But if you  
11 have an interest in seeing those, and getting an idea of the  
12 distinction, you know, what's the difference between these  
13 minerals -- what do these terms mean?

14 I suspect you're to hear more of that probably  
15 from the crushed stone industry would be very adamant about  
16 not being inclusive of cleavage fragments, for example.  
17 You'll probably hear that in Virginia.

18 MR. PETRIE: It would be up to you whether you  
19 want to present those into the record.

20 MR. KELSE: I think I'll probably hold off because  
21 I suspect that, that's going to be a major presentation in  
22 Virginia. I think they'll probably be some mineralogists  
23 that are going to be prepared to sit there and talk about  
24 this 3 to 1, longer than 5 business and how you probably

1 need to look at things at a much higher aspect ratio, and  
2 look for populations and stuff that -- particles that were  
3 actually closer to the actual dimensions of real asbestos  
4 and use that as a screening method before you go to sublight  
5 work and spend a lot of money and time.

6 If you can't see dimensions like that under light  
7 acrosophy, you probably don't have an asbestos environment.  
8 So if you did see that type of population, then you'd want  
9 to take it to the next step, and you'd want to get it  
10 analyzed thoroughly with -- would sublight work.

11 That's it. To the best of our knowledge, that is  
12 the health experience of Vanderbilt talc miners, past and  
13 present.

14 MR. PETRIE: The slides that you have shown this  
15 morning, will you be able to provide us with copies of those  
16 for the record.

17 MR. KELSE: Yes, they're in the folder.

18 MR. PETRIE: They're in here? Mr. Kelse also  
19 presented several documents for the record. I would just  
20 like to go through and read the title of those documents  
21 into the record. I'll do that at this point.

22 The first one is just entitled "Public Comments;  
23 the second one is, Mortality Among Workers at a Talc Mining  
24 and Milling Facility; the third is, A Nested Case Control



1 Study of Lung Cancer Among New York Talc Miners; next is,  
2 Similarities in Lung Cancer and Respiratory Disease  
3 Mortality of Vermont and New York State Talc Workers; next  
4 is, Relation of Particle Dimension to Carcinogens and  
5 Affable Asbestos and other Fibrous Minerals; next is a  
6 Reanalysis of the Stanton et al. Pleural Sarcoma Data.

7 The next one is, Biologic Test of Tremolite in  
8 Hamster; next is Mineralogical Features Associated with  
9 Cytotoxicity and Proliferative Effects of Fibrous Talc and  
10 Asbestos on Rodent Tracheal Affable and Pleural Mesothelia  
11 Cells.

12 The next one doesn't have a title per say, but  
13 it's dated 11/29/02. It has was I presume is the name of  
14 the author, Brian Boehlecke, MD., MSPH. The next one is a  
15 letter dated July 6, 1995 to Dr. Morgan from a Dr. Garcia.  
16 The next one is a submittal to an OSHA docket by our R.T.  
17 Vanderbilt Company. The docket is H-033D.

18 The next document is, The Regulatory and  
19 Mineralogical Definitions of Asbestos and their impact on  
20 Amphibole Dust Analysis. The next document is, the  
21 Asbestiform and Nonasbestiform Form Mineral Growth Habit and  
22 their Relation to Cancer Studies. And lastly, Asbestos,  
23 health risks, and tremolitic talc, the never-ending Saga.

24 Thank you, Mr. Kelse.