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Johns-Manville

Internal Correspondence

To: F. J. Solon, Jr.

Date: June 22, 1973

From: G. W. Wright, M.D.

Copies: File & C

Subject: MEMO

Even as far back as the preparation of the earliest criteria document for setting a standard of safe asbestos exposure, Dr. Selikoff has insisted that the standard should be much less than 2 F/cc time-weighted average. He bases this on his experience with insulation workers. He appears to believe that the exposures of insulation workers measured in the last two or three years is characteristic of their exposure over the past 40 years. Also, he uses a time-weighted average arrived at by dividing the calculated exposures by the total number of months worked in the year, paying no attention to the fact that there are long periods of time when his insulation workers have no exposure whatsoever to asbestos. He completely ignores the probable more adverse effects of the high intermittent exposure when he constructs his time-weighted average but on other occasions makes the point that persons exposed for only a few days may experience adverse health effects. It is not surprising, therefore, that he is now mounting a campaign to reopen the U.S. asbestos standard and do everything in his power to lower it below 2 fibers and, in my judgment, to abolish the use of asbestos fiber completely. I say this in spite of his repeated statements that asbestos can be used safely and he has no intention of banning its use.

With the above in mind, I believe the transcript of his statements at the American Industrial Hygiene Conference, both the formal paper and discussion, are of great interest. I urge that Drs. Holmes and Lewinsohn, as well as Mr. Luxon, be given copies of this transcript and asked for their comments with respect to accuracy of statements from the point of view of their own knowledge. I am certain there are grave inaccuracies but would prefer to have these pointed out by the men intimately involved and who would know first hand about these comments of Selikoff with regard to the British experience.

When it suits his purpose, as for example, in comparing Lewinsohn's X-ray data to that of John Knox, he praises the dust counts at Turner Brothers from 1950 on, but in my presence and at the hearings, he and his associates have declared this information to be of no use whatsoever. Furthermore, he completely ignores the large body of data available in the Quebec asbestos and mining industry.

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I believe there are serious faults in his utilization of Lewinsohn's information unless, in fact, Hilton has some new information that he has passed on to Dr. Selikoff, and which I have never seen. The following questions related to Hilton's paper, published in the Royal Society of Health Journal, Volume 92, No. 2, April 1972, will illustrate the areas in which Dr. Selikoff, in my judgment, has distorted or perverted Hilton's information. The questions are designed not only to point this out but also to assist me in a better understanding of Hilton's paper. The questions are as follows:

- (1) In Table 2, were the criteria for a diagnosis of asbestosis the same in 1968 as they were in 1957 and 1930?
- (2) Was the diagnosis of the single case in 1968 and also in 1957 in the group exposed 10 to 14 years based on definite X-ray abnormality or was it based predominantly on rates? (It would appear Dr. Selikoff doesn't consider the reduction from a 32% incidence to a 0.72% incidence in the 10 to 14 year exposed group as evidence of a good control of fiber.)
- (3) Is it possible to learn whether or not the single case in the category of 10 to 14 year exposure and 15 to 19 year exposure, as shown in Table 2, were in fact never exposed to more than 2 F/cc throughout that period of time?

Steve, Hilton and Mr. Luxon should be shown the tricky graph prepared by Selikoff and shown at the Boston meeting, and from which he apparently derived support for his contention that asbestosis was developing in less than 100 fiber years of exposure. I have the following questions about this and they pertain to Figure 2 in Hilton's paper as well as some questions that would be useful to have an answer to for my own knowledge. These queries are as follows:

- (1) What are the criteria for the categorization of fibrosis in Figure 2?
- (2) Is fibrosis counted more than once in any one person, as was apparently done for changes in the pleura?

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- (3) Were the criteria for X-ray fibrosis different in the series read by John Knox as contrasted to the recent series read by Hilton?
- (4) What does Hilton mean by "abnormal X-rays"?
- (5) Does Hilton have age matched controls from a non-exposed population for X-ray reading? In my experience, a small percentage of people will have 1/1 or even 2/1, especially in the older age group but who have never been exposed to asbestos fiber.
- (6) Does Hilton have X-ray data for men only? I agree fully with him that the categorization of 1/1 or 2/1 is very difficult in the films of most women.

More specific questions with respect to Selikoff's chart are as follows:

- (1) Does Hilton's "years of exposure" coincide with or express the same thing as cumulative fiber years? Selikoff leaves the impression at first glance that the Knox curve and Lewinsohn curve both relate to the abscissa. One must note that in fact, Knox's is based on fiber years whereas Lewinsohn's is based on years of exposure.
- (2) The second question asks whether or not the X-ray criteria in the Knox data were the same as those in the Lewinsohn data.

I believe I know the answers to many of these but I would like to have it with assurance from those whom you are planning to visit. In addition, their considered comments with respect to Selikoff's presentation, particularly with reference to erroneous statements or inferences would be enormously helpful.

I might add that in the past few weeks I have been trying to educate myself by visiting insulation operations and discussing exposures as monitored visually with old timers in the trade in the hopes that they could tell me something about earlier days-- the days of exposure causing the disease now being observed. Without exception, thus far, the insulation operations look very clean, make little or no use of asbestos fiber (a great deal of fibrous glass) and it would appear to

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support the contention that the number of fibers to which the workers are exposed is low, at present. The exception, not observed by me as yet, is the unanimously repeated statement that there are occasions when insulation workers handle crude asbestos fiber intermittently in a manner that creates a great deal of dust in the immediate breathing zone. Naturally, if these high exposures are worked into a time-weighted average, including the many months of zero exposure to asbestos when fibrous glass is being used, the time-weighted average would be very low. Without exception all of the men who worked 25 years or more ago have told me that conditions are enormously less dirty now than in those early days. They spoke of working many hours each week in the early days when even in the application of new insulation (85% magnesia) the dust created by pummeling the material into place was so dense that they would be unable to recognize anybody four or five feet away. This, of course, was amosite exposure.

Thus far I have not been able to speak with anyone who has worked as far as 40 years ago. I hope to do so. I have learned that from time to time foreign vessels in the shipbuilding yards, more so on the West Coast than on the East Coast, were often repaired and members of the Heat and Frost Workers Union had exposure to blue asbestos. In some instances this apparently was quite high but it would appear that many insulation workers in the U.S.A. have probably never been exposed to blue.

It is most unfortunate that Dr. Selikoff, in many of his publications, has never attempted to reconstruct the exposure histories in detail, comparing the exposure of those with mesothelioma, etc to those without. In spite of the failure to do this or to look at total dust exposures based on concentration of dust as well as time, Selikoff continues to assert that the mild or moderate exposures of the last few years have caused the severe experience of the insulation worker.

G. W. Wright, M.D.

GWW/cmr



Johns-Manville

Internal Correspondence

To: See Distribution List Attached

Date: October 30, 1974

From: F. J. Solon, Jr. - 4 North, DEN GHQ

Copies: File & Chrono

Subject: BRITISH TV PROGRAM
"KILLER DUST - A STANDARD MISTAKE"
THE SELIKOFF-LEWINSOHN CONTROVERSY

The attached transcript of subject British TV program has just been received from Wilfred Howard, Secretary of the Asbestos Information Committee of the U.K.

Apparently, following the revealment of Dr. Lewinsohn's figures in Jane Brody's New York Times article of September 19, Granada Films, an independent British TV producer decided to do a special program in their "World In Action" series on ITV, the independent television network in the U.K. The thrust of the program is obviously to dramatize the apparent controversy between Dr. Lewinsohn of Turner Brothers Asbestos Limited at Rochdale, England and Dr. Selikoff of Mount Sinai.

You will note at the end of the transcript that the controversy will not be settled in the minds of British government people until a new study by the British Occupational Hygiene Society is completed "early next year".

It's my feeling that since the U.S. OSHA standard on asbestos exposure is based on guidelines set by the existing British standard which in turn was based on the original Knox-Holmes studies - that OSHA may well wait for the results of the new study by the BOHS before issuing the proposed revision of the OSHA asbestos standard now being developed.

As Wilfred Howard notes in his letter, a film of this program should be in our hands in two to three weeks. Anyone who would like to screen it should phone me.

Report No. TN.12.....

Transmitted on.....ITV....."World in Action"

Length.....30. mins

Date.....14th. October, 1974.....

Time.....8.30.p.m.

Short Title.....Killer Dust - A Standard Mistake

Narrator: Acre Mill, Yorkshire: three years ago "World in Action" reported that men working with asbestos in this factory had contracted asbestosis, a disease which scars the lungs and is often fatal. The factory was closed in 1970. Doctors now know that the disease that killed many workers at Acre Mill was caused by asbestos dust particles in the air. If the concentration of asbestos dust is too high, it can seriously damage the lung tissues.

Concern at the mounting casualty rate, led the asbestos industry to agree on a British asbestos standard, a safe level of concentration for asbestos workers to breathe. The British standard was taken up and copied all over the world.

But today there's mounting evidence that the so-called safety level doesn't after all prevent asbestosis, even in factories where dust concentrations have been reduced to conform with the British standard, workers are still contracting lung disease. Tonight "World in Action" reports on a bitter controversy which has broken out between scientists, who say the safety level isn't safe at all, and the asbestos industry which defends the British standard.

Turner Brothers Asbestos Limited at Rochdale, a textile asbestos factory which employs three thousand people, part of the giant Turner & Newall Group, in an industry with twenty thousand workers. Here raw asbestos is spun and woven ready to be processed for industrial and domestic use. Back in 1951 it was this Rochdale factory which pioneered the study

of asbestos dust and its effect on the health of workers. They began to measure the level of dust in the factory, they took regular dust counts and began to see the effects on workers by x-raying them. The study went on for more than twenty years, for the first time it was thought possible to work out what level of asbestos dust was causing asbestosis.

The two pioneers in this study were Turner Brothers' Chief Medical Officer, Dr. John Knox, who's now dead and the company's Industrial Hygienist, Dr. Stephen Holmes.

Dr. Holmes: We were trying to record the dust levels which were the result of the engineering improvements taking place in the factory and at the same time, Dr. Knox was trying to record the changes in the health of the employees as a result of the improvements in working conditions.

Interviewer: And this was done together?

Dr. Holmes: This was done as a joint exercise. I was monitoring the factory. Dr. Knox was monitoring the health of the workers.

Narrator: In 1966, fifteen years after Dr. Knox and Dr. Holmes had begun their Rochdale experiments, the British occupational hygiene Society set up a sub-committee to work out a safety level for asbestos exposure. Dr. Holmes and Dr. Knox were invited to sit on the sub-committee, along with industry and other experts and a Government representative.

The results of the Rochdale study were offered to the Committee as evidence for a safety standard. Dr. Knox selected 290 men who'd worked for Turner Brothers for at least ten years, if any had got asbestosis it was appear on the x-rays and medical tests. First he reviewed their x-rays, then he measured their breathing. The noisy crackles heard through the stethoscope were a major indicator of lung damage due to asbestosis.

In 1968 Dr. Holmes and Dr. Knox were ready to present their conclusions to the sub-committee. Of the 290 men studied, only eight showed evidence of asbestosis, less than 3% of the group. More encouragingly in a section of eighty men who'd been exposed to low levels of asbestos dust, that is 3½ to 6 fibres per cubic centimetre of air, only one man had asbestosis.

The British Occupational Hygiene Society used this data to settle on a safety level. They decided that if only one man in eighty had asbestosis at the 3½ to 6 fibre level, then practically no-one would contract it if levels could be brought as low as 2 fibres. So a new British standard safety level was agreed - 2 fibres of asbestos dust per cubic centimetre of air, a cubic centimetre is roughly a thimbleful. But over a working day those 2 fibres add up to sixteen million fibres breathed in over an eight-hour shift. In 1969 the 2 fibre standard became the guideline for factory inspectors in new Government regulations for the industry. Some factories which couldn't reduce their dust levels closed down. Others were prosecuted for allowing concentrations of dust more than six times higher than the 2 fibre standard. But the standard itself was based only on a single study in this one factory, no other doctor had checked Dr. Knox's x-rays and the method of taking the dust counts was known to be difficult and inaccurate. The British Occupational Hygiene Society hadn't done an independent check on the figures. We put these criticisms to Dr. Holmes of Turner Brothers.

Dr. Holmes: At that time the Committee did not examine the clinical evidence. As far as I am aware the x-rays were examined by Dr. Knox himself and his data from the x-rays was given to the Committee.

Interviewer: So in fact we are now talking about just the evidence of one company where not even the clinical data was examined by the Committee?

Dr. Holmes: That is so.

Interviewer: And on this a whole standard was based?

Dr. Holmes: Yes.

Interviewer: In looking back on the data, why didn't the Committee publish the fact that dust counts can be notoriously inaccurate by as much as 30% either way?

Dr. Holmes: At that time we did not know just what the situation was regarding the accuracy of dust counts. The plus or minus 30% which is quoted today, is based on experience with fibre counting, since 1961 or thereabouts.

Interviewer: So that in fact the dust counting may have been even more inaccurate?

Dr. Holmes: Dust counts are notoriously difficult to do and inaccuracies are accepted - in dust counts, just as they are in many other similar situations.

Narrator: In 1969 Dr. Knox was succeeded by a new Chief Medical Officer at Turner Brothers, Dr. Hilton Lewinsohn. The study started by Dr. Knox was continued by his successor. The original medical records had been kept so had the x-rays. In 1970 Dr. Lewinsohn re-examined the 290 men who had been studied by Dr. Knox four years earlier. Knox had found only 3% with signs of asbestosis, signs like swollen fingers, and on that figure the 2 fibre standard had been based, but Dr. Lewinsohn's re-examination of the same men four years later, provided a result that was startlingly different. On the study where Knox had found that only 3% had the disease, Dr. Lewinsohn found that nearly 50% of the group had developed significant lung changes which could lead to asbestosis, this was a much bigger increase than could be accounted for by an interval of four years, or by improved x-ray technology. If Dr. Lewinsohn's

x-rays were right, Dr. Knox's must be wrong and so it seemed was the safety standard.

The results of the new study were first disclosed in 1972, when Dr. Lewinsohn gave a talk to a local medical group.

Dr. Lewinsohn: My talk was to illustrate the way in which we at this factory kept our asbestos workers under observation. As part of that paper I presented a graph and some figures of a preliminary nature to illustrate what we hoped to do with the information which we were collecting at the time.

Interviewer: And how did that data become public?

Dr. Lewinsohn: The talk which I gave was subsequently published in the journal of the Royal Society of Health as is their custom.

Narrator: But the results failed to cause any stir, they were presented in a series of complex graphs and no-one in Britain spotted their significance. But they were picked up in America: at New York's Mount Sinai Hospital, Professor Irving Selikoff has been studying asbestos diseases for twenty-five years, at his clinic in Paterson, New Jersey, he's been following his own group of asbestos workers for the past sixteen years. Selikoff knew of Knox's study in 1966 and spotted Lewinsohn's paper which had re-examined the original data.

Prof. Selikoff: We have a computer programme that reviews all the world's literature on asbestos disease and my computer told me that here was an article written on asbestosis and we obtained the article and read it. Dr. Knox reported that only eight people of the 290 working at 2 fibre level or 4 fibre or 5 fibre levels had x-rays that could be interpreted as asbestosis and, therefore, we could say that this was a safe set of working conditions and the second set of data indicated that there was a fair amount of lung scarring which would suggest that these were

not safe working conditions for the prevention of asbestosis. I think we all owe a debt of gratitude to Dr. Lewinsohn for having re-evaluated these data. This is very important because the standards that had been set around the world have largely been based upon this experience in Great Britain and if there is a hazard in this plant then we've made a mistake in many parts of the world.

Interviewer: When you say a mistake - mistakes can be large or small.

Prof. Selikoff: Oh, a large mistake, we have told hundreds of thousands of workers that it's safe to work under these conditions, that if you are inhaling air that contains two million fibres for every cubic metre, for every hour of breathing that it's safe and if we are wrong then we have told these workers something which was totally unwarranted and may result in serious disease among them.

Narrator: Professor Selikoff wrote to Dr. Lewinsohn for more information.

Dr. Lewinsohn: Professor Selikoff first wrote to me in 1972 and on receiving his letter I sent to him all the information that I possibly could upon .. giving him all the data upon which my graph and figures had been based.

Prof. Selikoff: I was confused, we had been under the impression based upon the original reports that in this factory very few people showed any lung scarring on x-ray. I think out of 290 people who had worked for more than ten years, only about eight had abnormal x-rays of a type that could be asbestosis and the new report indicated that, oh, in some groups 50/60% had evidence of lung scarring, this didn't seem to jell.

Narrator: Professor Selikoff raised the matter at a public meeting the following year and openly questioned the British

safety standard at a conference in Boston. His decision to go public was attacked by Dr. Lewinsohn's colleague at Turner Brothers, Dr. Holmes.

Dr. Holmes: We felt at the time that he would have been better to discuss his differences on the scientific level, rather than making a public pronouncement in a conference without consulting Dr. Lewinsohn or myself.

Prof. Selikoff: What was not known to me was that some people in the asbestos industry were taping the lecture and later sent this taped copy to Dr. Lewinsohn.

Narrator: When Dr. Lewinsohn received the tape, a furious correspondence broke out between the two scientists. The doubts raised about the safety level were now in the open.

Dr. Lewinsohn wrote to Professor Selikoff in July, 1973 -

Reader: "We cannot accept the implication that the publication allows doubt to be cast on the validity of the standard and are of the opinion that such a conclusion is unwarranted. You have used the information we provided in order to launch what seems to us to be a political campaign in the U.S.A. aimed at discrediting a hygiene standard for asbestos."

Narrator: To which Selikoff replied -

Reader: "I requested that you send me numbers to translate to figures and you did. My references were then made only to what you reported in your published paper. You suggest that the information is being used to launch what seems to be a political campaign in the U.S.A. aimed at discrediting our hygiene standard for asbestos. I note you sent your letter to the Asbestos Information Association of North America."

Narrator: Lewinsohn hit out by arguing that his study was incomplete, no conclusions could yet be drawn.

Reader: "The results presented in the paper were preliminary results and in the discussion section it was clearly stated that from the information currently available only tentative opinions can be expressed."

Narrator: Selikoff replied -

Reader: "I fail to see the relevance of the implied complaint. Nowhere did I quote your opinions, I was interested only in your data. The problem is a serious one, if the x-ray surveys have been inaccurately evaluated, then the standards are wrong and these workers are at serious risk of irreversible, often fatal, disease."

Narrator: We asked Professor Selikoff about the difference between the first study which produced the safety standard and the second which raises doubts about it.

Prof. Selikoff: Generally the progression of asbestosis - scarring of the lungs on x-ray isn't that rapid. There would have been in the normal course of events in four years, some additional scarring, but not that much. I think part of the problem has got to be that two different people read the x-rays and perhaps two different people are giving two different results.

Interviewer: Or somebody made a mistake?

Prof. Selikoff: That's also possible. It may be that one or the other has read the x-rays in a peculiar way and didn't come to results that the other one came to.

Dr. Lewinsohn: I wouldn't disagree with Dr. Selikoff that I saw more x-ray changes using the technique that I employed for reading x-rays, than would have been described in 1966 before this classification was available. I'm not certain that I would accept a tenfold increase because we differ on interpretation of the results.

Narrator: It's the interpretation of the two sets of x-rays taken by two doctors at different times which is at the heart of the dispute. Professor Selikoff says that the big increase in lung changes must mean a big increase in asbestosis. Dr. Lewinsohn says the lung changes he's observed may have nothing at all to do with asbestosis.

Dr. Lewinsohn: The x-rays which I had interpreted did not necessarily mean that because there were changes present on them, these people suffered from any form of disease. X-ray changes can be caused by many things, some of which have nothing to do with the person's occupational exposure. For example, living in an industrial environment, the effects of ageing, the effects of other diseases, previous occupations, smoking habits etc.

Prof. Selikoff: When lung scarring occurs among workers in an asbestos factory, I think until we prove otherwise we've got to say that that's asbestosis. If it's not asbestosis then it would be a striking new discovery that workers in asbestos factories have lung scarring from some other cause and I certainly think we ought to look to it.

Narrator: One reason for the dispute was that Dr. Lewinsohn's x-ray survey, although it showed the increase in lung changes didn't show how many of these changes had been confirmed as cases of asbestosis. Last month Turner Brothers released these figures to "World in Action".

By December, 1972, of the group of 290 men, 285 had been traced: 26 confirmed cases of asbestosis were found, three had died of it.

Prof. Selikoff: That would be about 10% -

Interviewer: 9.5.

Prof. Selikoff: That's three or four times as much as we had originally been told. In the United States if we knew now about this, that 10% would within the relatively short period of time, because some of these people had only worked for ten years, we would not be allowed to use that as a standard. In the United States - and I can only speak for the United States - most excess deaths among asbestos workers are no longer due to asbestosis, they're due to cancer.

Narrator: Lung cancer, a new and deadly complication in the tangled dispute over the figures, yet when the 2 fibre safety standard was set up in 1968, it deliberately excluded the cancer risk, it was a safety standard only against the lesser disease of asbestosis. The Committee explained -

Reader: "The quantitative relationship between asbestos and cancer risk is not known, consequently it is not possible at this time to specify an air concentration which is known will be free of risk in this respect."

Interviewer: Is cancer a major consideration with asbestos workers?

Dr. Lewinsohn: I believe that - I don't know what the exact figures are at the present time, but 50% of persons who suffer from the disease asbestosis are likely to die from lung cancer.

Interviewer: So at the moment of the 26 cases of asbestos that came through from Knox's group, you expect 13 of them to die of cancer?

Dr. Lewinsohn: I hope they don't, but on the basis of statistics available, they have a very much higher risk of dying of cancer.

Narrator: One of the deadliest forms of cancer attacks the chest walls, doctors call it meso thelioma. The safety standard is no protection, even at very low dust levels workers can contract it. Worst still new reports indicate that the families of

workers are getting this cancer.

off: These reports originally originated from in the United Kingdom. Some brilliant research was number of your scientists, they reported that a, this extraordinary tumour, was being found among children who lived in the same households with workers, or in residence about asbestos plants. this was due to the workers coming home with the dust clothes, in their hair, on their shoes and it became household dust.

We asked Turner Brothers how many of the 290 workers Dr. Lewinsohn had studied, had now died of cancer. John's latest updating of Knox's original group on "World in Action" shows that by the end of 1972 more than seven of the group died of cancer of the lung and mesothelioma, out of a total of twenty-eight dead. He gave these figures to Professor Selikoff.

off: Seven out of twenty-eight would suggest that one out of every four - 25% - had died of lung cancer, generally more than we see in the States. We see one out of every five dying of lung cancer and about 5% dying of mesothelioma in contrast to the 10% here. However these numbers are small and I wouldn't conclude yet that the experience in the States that you mentioned is going to be worse than that of the States, but I'm certainly concerned to hear this.

But once again Dr. Lewinsohn disagrees.

John: I would think that that is a misleading way of presenting these statistics. If one looks at the lung cancer deaths as a proportion of the total 285 men in the group, then I would think that they are about the same as one would expect as a medical

statistician would expect to find in the general population. It's, therefore, wrong, I believe, to give the impression that 25% of the 285 men died of lung cancer, or that 10% of the 285 men died of mesothelioma.

Narrator: Scientists will continue to argue about the interpretation of the Turner Brothers' study, but none will disagree that more could be done to lessen the risk to the health of asbestos workers and their families. Studies now show that quite low levels of dust can cause mesothelioma among wives and children, because particles of asbestos can be taken home on clothing and especially in the hair, workers have been urged to take precautions to protect themselves with special clothing provided.

Dr. Lewinsohn: We have been unsuccessfully attempting to influence people working with asbestos, particularly women and long-haired men, in the use of headgear. This has been unsuccessful and as the regulations, the present regulations, do not demand the use of headgear in the levels of exposure where these women are working, there is no legal means of enforcing the use of headgear. Furthermore it is not a condition of employment by the company.

Interviewer: Why isn't it made a mandatory condition, like matches down a mine?

Dr. Lewinsohn: I completely agree with you. However I do not decide company policy. I merely advise the company and I have repeatedly on many occasions offered this advice to the company. We have in fact got a sub-committee of our Health and Safety Committee at the present time under the chairmanship of our chief Shop Steward attempting to find ways and means of encouraging the use of headgear in our factory.

Interviewer: You could simply make it mandatory.

Dr. Lewinsohn: I couldn't, the company could.

Narrator: But critics of the industry, like Professor Selikoff, believe that the enforcement of safety regulations won't be enough.

Interviewer: To prevent diseases would mean massive sums of money to change working conditions, it might totally ruin the industry.

Prof. Selikoff: There will be some products and some operations which would require the vast expenditures that you detail and which would therefore be uneconomic. I think in those circumstances we probably will have to abandon those products and those processes.

Narrator: Concern in the asbestos industry is running high. The British Occupational Hygiene Society has now undertaken yet another review of Turner Brothers' data. This time four doctors, three of them independent of the asbestos industry, will re-examine all the x-rays. On their findings, which are expected early next year, will depend the future of the British asbestos standard and perhaps of the asbestos industry.

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