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PLAINTIFF'S EXHIBIT UC-202

STATEMENT OF JAMES W. RAWLINGS
VICE-PRESIDENT, MINING AND METALS DIVISION
UNION CARBIDE CORPORATION

HEARING ON PROPOSED ASBESTOS STANDARDS
UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT

March 16, 1972

I am James W. Rawlings, Vice-President of the Mining and Metals Division of Union Carbide Corporation and Product General Manager for the Division's asbestos business. As such, I am concerned with all activities of our asbestos operations from mining to sales.

There are nine asbestos producers in the United States supplying approximately 15% of the total domestic market. The remaining domestic market is primarily supplied by Canadian producers. Union Carbide's single asbestos mine is located in the remote New Idria mining district of California and the ore is processed 55 miles away at a mill near King City, California. The deposit was discovered by Union Carbide geologists in 1958. It contains several hundred million tons of a 50% crysotile short fiber ore and is one of the world's significant mineral reserves.

Despite the vast size of the deposit, the decision to develop it was difficult. The complete lack of long or medium fibers precluded any participation in such economically significant asbestos markets as textiles, insulation and cement. Moreover, our ability to directly compete with co-produced Canadian short fiber asbestos in floor tile, tape joint and other traditional short fiber markets located in the eastern United States was marginal due to higher freight rates. It was also apparent that even major participation in traditional short fiber markets in the western United States would not afford sufficient economic justification to develop the deposit. Therefore, Union Carbide undertook a substantial research program to develop new uses for high purity, highly dispersed short fiber asbestos. As a result of this program, new applications for asbestos were developed along with a unique, wet milling process. Based on this work, the mine was developed and the King City mill was constructed. Operations began in 1963. Consistent with the initial strategy, our major marketing and research efforts have continuously been directed toward the development and sale of asbestos products for new applications which, as a group, we identify as "specialty products".

The economic viability of Union Carbide's asbestos business is dependent on its ability to maintain its specialty products market. Certain of the proposed regulations seriously threaten this market by imposing restrictions which, in our opinion, go beyond those reasonably required to protect the health of individuals working with the products. However, before discussing the specialty products market and the impact of the proposed regulations, I would like to briefly outline the economic benefits which directly flow from Union Carbide's present ability to participate in this market.

The small community of King City, California benefits from an annual payroll of approximately $500,000. Supporting asbestos sales and technical personnel in widespread locations account for an additional annual payroll of approximately $200,000. Union Carbide Corporation realizes contribution income of approximately $500,000 per year from the utilization of a gross investment of over $6,000,000. In addition, one of the world's largest mineral deposits is being utilized to benefit the general economy of the Nation.

While time will not permit a description of each of our specialty products, a somewhat detailed description of one is necessary in order to place our comments on the proposed regulations in meaningful context. By far, our most significant specialty product is a chemically surface coated, high purity asbestos fiber which serves as a thixotropic agent in such strong binder resins as polyester, epoxy and polyvinyl chloride. Thixotropic agents impart an almost startling property to these resins, namely, low viscosity under high shear stress and high viscosity in the absence of stress. Stated another way, the addition of an effective thixotrope makes it possible to spray a resin mixture almost like water which will, when it makes contact with a static surface, almost immediately become a solid which will not run or drip. A very substantial application for our asbestos thixotrope is in polyester resins used in the fabrication of boat hulls. Typically, the hull is built up on a mold, working from the outside in. A polyester coat is sprayed on, followed by a layer of fiberglass and then by another polyester coat. This process is successively repeated until the hull is built up to the required thickness. Essentially, the same procedure is followed in producing a variety of other products such as shower stalls and automobile body parts. Applications of this nature would not be possible without the viscosity control afforded by an effective thixotropic agent.

The only significant alternative thixotropic agent now available is amorphous silica. The silica product has a much lower

bulk density than our asbestos product and is inherently much dustier. It is more expensive than our product and is, in our opinion, a much less efficient thixotrope. Amorphous silica dust levels are also regulated under the Occupational Safety and Health Act. However, the silica dust hazard and attendant regulations have received much less publicity and its continued use is not questioned by customers.

Our asbestos thixotropic product is typically added to the binder resin in concentrations varying from 0.05 to 1.0%, although in some few applications it may exceed 5%. The market for this product consists of literally hundreds of customers, each using a relatively small quantity of asbestos. For instance, in 1971, 70% of the companies to whom we supplied thixotropic asbestos used less than 0.7 tons per year and none used over 35 tons per year. (For comparison, one average sized floor tile plant will consume approximately 15,000 tons of asbestos per year.) The thixotropic agent is added to the binder resin in mixing tanks on an intermittent and not on a continuous basis. As previously noted, the resulting resin mixture is often applied by spraying techniques and the finished plastic product may be sanded, sawed or drilled. The results of tests which we recently completed where these operations are conducted have been tabulated and are attached to the written copy of this statement. These tests indicate that atmospheres of approximately one fiber per milliliter are generated by the spraying of polyester resin mixtures containing 0.5% asbestos fiber. However, the fiber observed does not have the typical asbestos appearance under a microscope and may be some other substance. The sanding of polyester furniture in a well ventilated plant resulted in essentially no detectable free fiber. However, the asbestos fiber content of the furniture was only 0.05%. The power grinding of rough edges on a boat hull liberated a maximum of three fibers per milliliter. However, some of the fibers observed here appear to be fiberglass and not asbestos. The range of fiber counts recorded in introducing our asbestos thixotrope to an unventilated resin mixing tank varied from 1.3 to 11.5 fibers per milliliter with an average of 3.9 fibers per milliliter. Here, the care taken by the operator in introducing the material was an important variable. It should be noted that the introduction of the competitive amorphous silica thixotropic product to an unventilated resin mixing tank exceeded, in each instance, the presently applicable Threshold Limit Value of 20 million particles per cubic foot. Based on this data, we believe that the use of respirators should be mandatory during the relatively infrequent periods when either our product or amorphous silica is being

introduced into unventilated resin mixing tanks. We would also agree that ventilation of the mixing tanks should be provided wherever feasible.

The proposed regulations, published on January 12, 1972, place specific restrictions on a variety of operations such as the spraying of and the use of various tools on asbestos materials whether or not the applicable Threshold Limit Value is exceeded. Also, the proposed regulations generally call for personnel exposure monitoring, including the maintenance of data for 20 years where exposure to concentrations as high as 250 fibers per milliliter are encountered. However, personnel exposure monitoring is required for the spraying of or the use of various tools on asbestos material without reference to any exposure level. We can see no justification for imposing special limitations on spraying or working with asbestos containing materials without reference to the basic standards otherwise deemed acceptable under the regulations. The impact that the regulations as proposed would have on our specialty product business is obvious and distinctly adverse, particularly because there are no comparable restrictions applicable to the competitive amorphous silica product. By the same token, there are no warning signs proposed for areas where amorphous silica dust may exceed the applicable Threshold Limit Value. However, the proposed regulations call for the posting of what we believe are excessively alarmist warning signs wherever an asbestos "dust hazard" is present. The term, "dust hazard" is not defined. Certainly, it should be made clear that warning signs need be posted only where the established Threshold Limit Value may be exceeded.

By letter dated February 11, 1972, Union Carbide submitted its comments on the proposed regulations to the Department of Labor. In that letter, we recommended specific changes in the wording of the proposed regulations which would minimize the problems outlined above. We believe that the recommended changes diminish in no way the basic objectives of the regulations. Without these changes, our ability to maintain our specialty products market will be seriously impaired and our ability to continue our asbestos operations will be in doubt.

To this point, we have not commented on the proposed regulations as they would apply to our own operations. Here, we do have a number of advantages. The natural moisture content of the ore in our California deposit runs from 15 to 20%. The moist ore is transported in canvas covered truck beds to a stockpile at the King City mill. A sprinkling system on the stockpile adds

additional moisture to the ore. The milling process at King City is a unique, wet system (the ore is introduced and processed in a slurry) which inherently minimizes dust generation. Notwithstanding these advantages, we are planning to make an additional capital investment of approximately $300,000 in order to further reduce concentrations of airborne asbestos fibers in the mill.

We are confident that we can comply with a Threshold Limit Value of 5 fibers per milliliter in our own operations. It is our opinion, however, that a Threshold Limit Value of 2 fibers per milliliter cannot be achieved in our operations by any presently known combination of engineering installations.

While we have not introduced any medical testimony, we do concur with the views which have been expressed by several competent witnesses that the adoption of a 2 fiber per milliliter Threshold Limit Value is not reasonably supported by existing medical evidence.

Thank you for your attention.

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Experimental Data - Asbestos Fiber Concentrations

Operation	Material	% Asbestos	Number of Tests	Number of Samples	Fiber Count* Range	Fiber Count* Average	Comment
Spraying - lamination of "fiberglass" shower stalls & boat hulls	polyester resin in styrene with chopped fiberglass	0.4-0.5	2	10	0.8-1.4	1.12	Fiber visual appearance not typical of asbestos. Samples taken over 5 hr. period. Medium to large building, no forced exhaust.
Sanding - by hand	Tape joint compound	5.	2	2	0.05-0.65	0.58	Normal medium sized room no ventilation.
	Polyester furniture	0.05				<0.1	Normal commercial plant, general ventilation.
Electric Recip. Sander	Tape joint compound	5.	2	2	2.1-2.7	2.4	Closed medium sized room, no exhaust ventilation.
	Polyester furniture	0.05	1	3	<0.1	<0.1	Local exhaust ventilation operating.
Powder Grinder	Fiberglass Boat Section	0.38	1	3	2.1-3.0	2.5	Some fibers appear to be fiberglass - Outside.
Emptying Bags	Fiber	100%	6	9	1.3-11.5	3.9	Number of bags and operator skill are variables.
	Amorphous Silica	--	1	3	24-39 MMPCF	30.4 MMPCF	

* Fibers > 5 μ in length per ml. - Standard sampling and counting procedures by a certified Industrial Hygienist from Union Carbide's Industrial Medicine and Toxicology Department.

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