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UNION CARBIDE NUCLEAR COMPANY

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Union Carbide Nuclear Company

PLAINTIFF'S EXHIBIT
UC-3152

To (Name) Mr. L. A. Bliss
Company Union Carbide Nuclear Co.
Location 30 East 42nd Street
Room 1722

Date April 12, 1960

Originating Dept. Sales Development

Answering letter date

Subject Asbestos Markets
Status Report.

Copy to
Mr. A. Q. Lundquist
Dr. C. O. Strother
Mr. W. M. Smart
Mr. S. J. Cromer
Mr. W. N. Johnson
Mr. H. L. McKinley
Mr. J. L. Lake
✓Mr. T. S. Ary
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Dear Mr. Bliss:

In the last 90 days we have learned a good deal about prospective asbestos markets. We have moved substantially closer to obtaining customer approval and purchase commitments -- particularly in the past 30 days during which Dr. Hall has been in close contact with the industry on the Coast and there has been parallel and objective vinyl tile development work by our people at Bound Brook.

This is to give you a brief digestion of the situation as we see it today. There is reason for excitement in the present picture:

1. What loomed initially as definite shortcomings and disadvantages of Coalinga fiber, particularly for vinyl tile uses, have now been reasonably resolved by the Bound Brook work by minor tile formulation adjustments, none of which would cost the consumer money. The physical properties of the product tile have been demonstrated at Bound Brook as comparable to that made with Johns Manville, Lake and Philip Carey asbestos -- if not superior.

2. The pace of customer evaluation has stepped up. The various laboratories have encountered the color and color stability anomalies, and the difficult physical handling characteristics (due to higher oil absorption characteristics of Coalinga fiber) which came to light in the early Bound Brook work. We expect that within a relatively short time these groups, employing some of the Bound Brook information, will demonstrate the utility of the fiber for vinyl tile to their satisfaction.

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A major part of the experimental work by ourselves and others has been done with "average" fiber from the pilot production in the Danville milling runs. Nevertheless, this appears likely to carry us successfully through the small test lot stage (5-100 pounds); ton lot evaluation is planned to come from the coordinated Condor drilling-milling-sampling program now in its first stages at the site. Although vinyl tile producers uniformly consider carload test levels for definitive approval -- our negotiations are aimed at approval at the ton lot stage, commitment to be based on delivery of initial carloads of comparable material from the plant.

3. There is growing evidence that a single product fiber useful in vinyl tile may also satisfy the various other uses for "shorts" we are investigating. Tentative approval has been gained among some of the larger asphalt tile (actually oil-coumarone) producers -- and among others for use in phenolics, plastic gun cements (stucco), vermiculite compositions, etc. Tile applications are, of course, the most critical use areas. This may infer a lower grade fiber (Bauer mill product ?) may be adequate for the other areas, and this is under study. Summed up, it is likely our first provision for as many as 6 possible products in the initial plant concept may be conservative; minimizing these will, of course, minimize investment and expense.

4. Freight rate studies, as yet incomplete, indicate a wider range of geographic markets may be reached. The freight differential (Coalinga versus Quebec) is now in our favor in the Southwest ($5.30 per ton, and may be improved) and reaches a "toss-up" situation in the vicinity of Kansas City. There are indications direct work by Traffic with the carriers may move this point of zero differential as far east as Chicago.

This can have important and rapid effect on the total market we can consider; vinyl tile producers carrying out active evaluation of our material on the West Coast have similar sized plants in the vicinity of Peoria; Kankakee; Jackson, Mississippi; Chicago; etc.

We are hopeful traffic studies on specialized sea shipment (either unopened fiber or product) may permit active consideration of the Eastern Seaboard market.

5. In rough terms it now appears we can aim at obtaining initial commitments for as much as 75,000 tons per year of fiber -- and most probably acquire commitment for 50,000 tons by this summer. For the market reasons indicated below, it is becoming more and more evident that when and if we declare an entry and begin plant construction, those who decline commitment in the early stages will come in.

This is an industry which does not now operate under contracts. Nevertheless, our contract discussions have met with favor. A tentative price range of $60-$65 per ton of fiber for West Coast customers (yielding a minimum of $50 at the plant) has stimulated great interest.

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GENERAL MARKET SITUATION.

1. Volume Potential.

Our prior estimates indicated a West Coast potential for short fiber of between 100,000 and 125,000 tons per annum -- double this if the Southwestern and Chicago areas are included. If anything, these figures may be conservative. To the sizable list attached to the December 22nd report, we can add at least 20 new possible customers who have been contacted; in addition, the consumption levels at the West Coast plants of the listed customers is now in many cases indicated higher than the first published figures. At the same time customer attitude is that their requirements are growing and this has significant bearing on the plant size we contemplate. A 150,000 ton-per-year plant concept appears quite realistic.

2. Customer Attitude.

Most West Coast users would welcome a "local source" of asbestos -- freight economy being the key factor. Exceptions are those (Johns Manville and Flintkote) with mining affiliations, but these eventually could be overruled by the economy factor.

However, there is underlying apprehension among all concerning a new supplier, not related to product quality. This goes back to the short fiber shortage condition which is quite real, and frequently limiting in customer expansion plans. Whether due to a policy of favoring their own end product plants in the area or other reasons, Johns Manville and other suppliers have been somewhat rigid in their treatment of consumers. Several of these consumers have stated that should they draw away from their current sources, they could not hope to regain a purchase position; evidence of this is a past pattern under which little fluctuation in month-to-month purchases has been allowed by the supplier.

The significant point here is that when and if we move to market entry, we should be fully prepared to deliver full customer requirements and be prepared to increase supply along with their expanding business. This is why we hold to initial minimum plant capacity of 150,000 tons per year. Actually this situation can work to our favor -- providing receptive conditions for contract arrangement.

Over the years other potential West Coast suppliers have contacted the consumers, and this contact continues to a degree. However, generally these have been based on possible small operations, insufficient to sustain supply and of limited capital; hence little real interest is stimulated among major consumers. Conversely, consideration of production by a corporation of Union Carbide stature stimulates enthusiasm.

A few side issues are interesting and may underscore the sincerity with which our possible market entry is viewed. Technical and purchasing people at the San Francisco Flintkote plant (served by their own mining sources) were initially interested in our test materials and did not consider the indicated technical shortcomings as

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serious. Shortly thereafter, and likely after consultation with their home office people, Flintkote has been quite derogatory about the fiber samples and generally negative in their attitude. To avoid being used as a "competitive tap-in" on our planning, we are, for the time being, minimizing our contact with these people. Here again we feel that when and if we establish definite plant construction plans, the persuasion of economy will alter this attitude.

One of the largest distributors of Johns Manville fiber on the West Coast, Paul Wood Company, who have served the industry for about 12 years and now have at least ten salesmen in the field selling asbestos as well as their other product lines, independently approached us with regard to considering a distributorship arrangement. Their statement was to the effect that realistically they recognize if a large West Coast producer came into the field they may well lose their present market. They and several other "distributor companies" are being looked at as possible means of handling the contacts with smaller consumers, LCL distribution, warehouse points, etc.

3. Competitive Activity.

We and others have reported on the relatively small operations either now supplying limited amounts of fiber or contemplating supply. We do know that Clute moves material into Western Chemical and occasionally spot lots to Flintkote and to the plastic cement people. Nevertheless, their business does not add up to as much as 1,000 tons per year of the kind of fiber markets we are contacting.

We continue to find no evidence of Jefferson Lake fiber sales development. Actually this has caused real interest and speculation among the consumers with the general feeling (as yet without evidence) developing that some arrangement on consumption-sales may have been made between Jefferson and Johns Manville.

TIME TABLE.

1. Small Test Lots (5-100 Pounds).

With West Coast customers we are close to the original schedule for this phase. As of today problems relating to vinyl and asphalt tile uses have been resolved only to our satisfaction in the most recent Bound Brook work. Therefore we should expect it to be early May before customers may have demonstrated resolution of these problems to their satisfaction.

2. Ton Lots.

All major customers have taken the position that final material approval rests on carload lot tests in actual plant production runs.

The Sterling Forest pilot plant has insufficient capacity to produce such carload lots. For production of 20 carloads (800 tons)

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originally indicated in our December 22nd time table, a new pilot plant (on site ?) likely would involve relatively high investment, and substantial construction time.

As a consequence our aim has been to attempt to establish approval on the basis of ton lots which can be produced at Sterling Forest. This is by no means automatic; however, we have gained headway in inducing customers to think in terms of a letter of intent commitment which would be contingent upon the initial plant-produced carloads being comparable, and testing satisfactorily in customers' plants.

We have reason to be confident this approach will yield no serious problems. The ton lots will be supplied from the Condor drilling-refining program now under way; an important part of this program concerns the likelihood that Condor will be the first mining area for the full mill.

Timewise, the first Condor material will be available from Sterling Forest between the middle and end of May. It is reasonable to believe the Condor product will perform satisfactorily in Bound Brook control tests; subsequently we can go immediately to supply of ton test lots to the customers. According to this pattern, it is likely we will be well into July before such material actually has reached the customers and obtained thorough testing. This would mean that as of now we are probably aiming at an August 1 target date for a Construction Budget Request.

3. Additional Aspects.

Tile Aging Characteristics: All customers producing vinyl and asphalt tile must carry out storage and weathering tests which run, on the average, about a year. Such tests can go on while our own plant may be under construction.

Desirability of a Pilot Facility: By the foregoing we have indicated means by which we believe the sales development work may be carried forward circumventing sizable expenditure for a pilot plant at this time. However, we feel there is good reason to consider construction of a pilot facility on site and adjacent to the large mill. As is known, this appears to be standard practice among Quebec producers -- for the various purposes of evaluating mining areas, establishing control in the full plant, etc.

Such features may be quite significant in regard to the Coalinga deposit. We should also consider the following additional benefits which could obtain if, on justifying full plant construction, we began promptly to "fast build" the on-site pilot unit:

a. Opportunities to train operating personnel.

b. Refine plant start-up and operating data.

c. Provide initial carload quantities in advance of full plant completion.

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With respect to sales, the latter point could conceivably carry us through the carload approval stage and ready consumers for sizable and continuous flow from the full plant. Such an intermediate facility may be quite valuable for bridging the gap between essentially no production and large production -- and planning of this type would greatly stimulate customer confidence.

Very truly yours,

AEPufahl/dh

A. E. Pufahl

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