PLAINTIFF'S EXHIBIT
UC-218

To: Messrs. M. G. Dial
H. S. Bunn
D. B. Benedict
A. L. Foscue
K. H. Hannan
W. M. Haile
B. Mason, Jr.
H. B. McClure
K. Rush
E. B. Suydam
B. Helmer, Secretary

Date: November 10, 1960

This is after the CBR was turned down
Rush

Copy to: J. F. Shanklin

Re: Union Carbide Nuclear Company
Construction Budget Request
Project N-42
Short Fiber Asbestos Mine
and Plant in California

Gentlemen:

In the course of analysis and review of the subject project by your Committee, and our own continuing examination, various questions have been raised which bring us to the conclusion that we should approach the development of the Corporation asbestos resource more deliberately. With your agreement, we propose to defer decision on construction of a commercial plant -- but proceed with a pilot plant and product and sales development programs as summarized in the attachment.

Concern has centered about the marketability of Coalinga asbestos product -- specifically as to the assured utility of this fiber in existing uses. No less significant is the great size of the deposit, giving rise at some time in the future to possible competitive operation in the area by others. We would expect to put a pilot unit into operation by May, 1961 and produce and sell at current market price a sufficient number of carloads of fiber to establish reasonably assured utility by full-scale customer plant tests in a number of applications. As the tabulation indicates, sales value approximately should cover the operating expenses for this unit.

Our development work in reaction of Coalinga fiber -- such as with SO_2 -- has shown promise toward possible development of a proprietary product. Treated fiber may appreciably reduce the expensive stabilizer requirement in vinyl tiles -- and we would hope to carry this work to customer mill test stages during the 1961 program. Additional product development work during the course of the pilot program should extend our knowledge and confidence in some already promising "new use" areas, as well as for existing uses.

During this year we would also wish to reexamine the possible alternatives with respect to control of the deposit, including some reasonable arrangement with the so-called Tanner interests which represent the most substantive portion apart from our own. We feel it might be prudent to explore some basis for investment participation by primary consumers as a contribution to market security.

There now appears to be no community of interest with Johns-Manville encourage collaboration -- but we would be prepared to move accordingly if is should change in the future. Even if Johns-Manville should elect to oceed with their tentative plan for a 25,000 ton-per-year fiber plant on e Kern County land area of Coalinga, we believe adequate market still will available in the West and Southwest alone to support at least a 75,000 ton-r-year Union Carbide plant as an initial step in exploitation of the property.

Various Committee members have inquired as to the financial results a plant of capacity less than 150,000 tons per annum were installed. For our information a financial analysis of a 75,000 ton Coalinga asbestos plant s attached. The effect of several different prices has been considered in rder to provide additional perspective. The prices given in the table below re f.o.b. a mill at Coalinga in order to eliminate the effect of a changing istribution pattern on freight costs; as the price is lowered, a higher per-entage of sales would be made in the western area. Our previously assumed rice of $62/ton delivered to the customer may also be stated as $48.30/ton .o.b. Coalinga as the assumed distribution pattern corresponded to a freight ost of $13.70/ton. For comparison, we have examined the effect of a change to he present Canadian price of $41/ton f.o.b. their mill and of a change to a rice of $29.61/ton which will exactly provide returns at the 10% marginal ate. The several criteria of interest are as follows:

rice - $/ton f.o.b. Coalinga	$48.30	$41.00	$29.61
verage NIFS - $'000	4,539	3,002	2,168
Discounted Cash Flow, %	29.	23.	10.
verage ROI, %	53.	41.	15.
Pay-back Period, Yrs.	4.4	5.6	14.
Net Present Value (10% MRR) - $'000	6,655	4,282	-0-

This analysis is for illustrative purposes only. No authorization for construction of the mill is requested at this time.

We have given considerable thought to proceeding with engineering for a commercial unit as a parallel effort to the pilot program, primarily to conserve time. However, due to uncertainties regarding the size of the ultimate unit, no further engineering is planned at this time.

We solicit your authorization to proceed with our revised plan as outlined. Such a program logically should culminate in a new commercial proposal at some time in the future.

Very truly yours,

Lyman A. Bliss

A 10208

PROPOSED ASBESTOS PROGRAM FOR 1961

		Capital	Expense	Total
Cost of Holding Claims		$ 25,000	$ 99,000	$124,000
Product Development			125,000	125,000
Sales Development			10,000	10,000
Pilot Plant Construction		177,000	23,000	200,000
Pilot Plant Operation				
Operating Cost	$218,000			
Income from Sales	200,000			
Net Operating Cost	$ 18,000		18,000	18,000
TOTAL		$202,000	$275,000	$477,000

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Cost of Holding Claims

Purchase Payments Committed	$20,000	
Purchase Payments under Negotiation	5,000	
		$ 25,000
Assessment Work		
350 claims at $100 each		35,000
Payments to maintain road right-of-way		3,000
Legal Expenses		25,000
Survey and Claim Work		
not applicable to assessment work		
Salaries	$24,000	
Contract work	5,000	
Supplies	5,000	
Vehicle maintenance	2,000	
		36,000
TOTAL		$124,000

The above itemized costs pertain only to existing Union Carbide holdings. Payments and assessment work are for claims already staked or purchased from others. On these properties a modest surveying program will be required. Land that was initially staked by us was done in a manner that allowed maximum area to be staked in as short a time as possible. This rapid program necessarily sacrificed some accuracy in claim location. We are now, and will need to continue, carrying out a survey program to more accurately define these claims and stake any fractional claims that were missed in the initial program.

Product and Sales Development

	$125,000
	10,000

These programs, as outlined in the covering letter, will require the services of approximately 5 people at our Tuxedo laboratory, and selling effort to obtain satisfactory product evaluation.

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Pilot Plant Construction

	Capital	Expense	Total
Process Equipment	$ 60,000		$ 60,000
Modification & Transfer of Existing Equipment		$17,000	17,000
Building Modification		2,000	2,000
Equipment Installation	58,000		58,000
Furniture & Fixtures	4,000		4,000
Mobile Equipment	8,000		8,000
Engineering & Construction Supervision	13,500		13,500
Contingency	33,500	4,000	37,500
TOTALS	$177,000	$23,000	$200,000

The pilot plant will be installed in a rented building in Coalinga, California. The basic process equipment for fiber separation will be transferred from our Tuxedo laboratory. Additional equipment will comprise a continuous drier, a bag packaging machine for product, and materials handling equipment to allow for continuous operation.

The design capacity of the pilot plant will be one ton per hour of product (approximately 2 tons per hour of ore feed).

It is expected that construction will require 4 to 5 months, allowing start-up about May 1, 1961.

Pilot Plant Operation

8 Months Operation

Salaries & Wages	$ 73,500
Benefits & Salary Tax	11,000
Mining (chargeable to assessment work)	0
Ore Loading	6,000
Ore Hauling	32,000
Tails Hauling	3,200
Custom Crushing	10,000
Power	12,800
Fuel	8,000
Bags and Pallets	19,200
Wear Parts	1,600
Rent	1,600
Contract Maintenance	4,000
Miscellaneous	7,100
	$190,000

A 10211

4 Months Pre-operating Expenses

Salaries & Wages	$ 12,000	
Benefits & Salary Tax	1,800	
Rent	800	
Road Repair	3,900	
Moving & Relocating Expense	9,500	
	$ 28,000	
TOTAL		$218,000

Pilot plant operation will be 3 shifts per day, 5 days per week. Allowing for maintenance down time and interruptions for special experiments, it is estimated that the production rate will be approximately 400 tons per month or 3,200 tons over the 8-months' operating period (64 carloads).

This product would be sold on the West Coast for customer plant tests among approximately 50 customers. We would expect to sell the material at a price of $62.00 per ton, f.o.b. our plant. The total sales would be approximately $200,000 over the 8-months' period.

Illustrative Financial Analysis for 75,000 Ton Fiber Mill

A cash flow estimate has been prepared for a 75,000 ton-per-year asbestos mill as one example of the profitability of exploiting the Coalinga deposit. The size of the mill for this estimate is a reasonable order-of-magnitude choice and not based upon any economic optimization. The assumptions and estimates required for the cash flow are as follows:

1. Construction cost of the mill estimated at $4,130,000.

2. 75,000 tons-per-year fiber product from a mill feed of 150,000 tons per year of ore.

3. Volume sales of 50,000 tons of fiber in the first year after start-up and 75,000 tons of fiber per year thereafter.

4. Sales price of $62 per ton delivered to the customer ($10 per ton less than the current West Coast price).

5. Average freight rate of $13.70 per ton with the majority of the sales in the West and Southwest. Thus, the effective price f.o.b. our own mill is assumed to be $48.30 per ton.

If pressure for a reduced price is brought by competition, it should be noted that a 10% Marginal Rate of Return will be realized even if our price is reduced from the above $48.30 to $27.30 per ton, f.o.b. our mill. This latter price is, of course, less than the freight cost alone from Quebec to the West or Southwest ($31 per ton).

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