

October 18th, 1939

Mr. William F. Barrett, Vice-President
Union Carbide and Carbon Corp.
30 East 42nd Street
New York City

Dear Mr. Barrett:

Enclosed I am sending you a short memorandum referring to the conversation which we had on Monday this week. We have calculated how much graphite we would need for the preliminary experiment, which we propose to start immediately, and find that we could probably manage with 4 metric tons. As you will see from the enclosed copy of a letter of the National Carbon Co. the price quoted for this amount of graphite is about \$ 3500.- As soon as you let us know whether we can have this amount of graphite we would take all the necessary steps for preparing this experiment.

I have telephoned to your office today and left a message with Mr. Mills in order to ask you whether you would care to meet Professor Pegram, who is in charge of the Physics Department at Columbia University, and Professor Enrico Fermi one of these days for lunch at the Faculty Club. If you let me know what days would be convenient to you I would find out when the others are free and communicate with you.

On Friday I have to leave for Washington where a meeting has now been fixed for Saturday, but I hope to be back by Tuesday at the latest.

Yours very sincerely,

(Leo Szilard)

c/o Department of Physics
Columbia University
New York, N. Y.

December 2, 1940

Mr. R. J. Hoffman
Union Carbide and Carbon Corp.,
30 East 42nd Street
New York, N. Y.

Dear Mr. Hoffman:

I wish to thank you for the kind attention which you have given our problem when I talked to you on Friday. Confirming our conversation, I should like to set forth the following:

When I approached Mr. W. F. Barrett in September or October of last year, the possibility of a close cooperation between your corporation and the group of physicists with which I am collaborating appeared to be one way in which this work could be accelerated. At that time I suggested that four tons of graphite might perhaps be supplied as a gift to Columbia University on the part of the National Carbon Company. When your company did not seem to be interested we refrained from approaching other industrial corporations.

In January or February of this year an attempt was made to purchase four tons of graphite from the National Carbon Company through the National Bureau of Standards, and if I remember correctly the National Carbon Company made a bid for four tons at a price of about \$1500. Other companies also made bids and finally the order was placed with another company.

At present the situation is as follows: We have measured certain constants of graphite on a four ton lot and intend to repeat this measurement on a lot of forty tons in order to obtain a more accurate value. I personally would be glad if the possibility of a later, closer cooperation with you were kept open, and therefore would like to know whether the brand of graphite which you are able to produce is suitable for our purpose. I should therefore like to be able to have your graphite subjected to a test in a four ton lot.

December 2, 1940

As you will see from the enclosed copy, Columbia University has asked the National Carbon Company to put in a bid for both four and forty tons, but there can be no question of our placing an order for forty tons unless we are able to first carry out a preliminary test on a four ton lot. Even so, it is by no means certain that a satisfactory result on such a preliminary test will lead to an order being placed with the National Carbon Company.

When I tried to approach Mr. Barrett last week, and in discussing with you this matter, I did not intend to re-open those discussions which I had with Mr. Barrett last year. The only purpose of my visit was to inform you that we are asking the National Carbon Company to make a bid on a special brand of graphite, and to leave it to your judgment whether you think it advisable or not to intervene with the National Carbon Company in favor of letting us have materials on short-time delivery and at low prices.

I may add that I personally feel that the price quoted to the National Bureau of Standards, namely, \$1500 for four tons, is a reasonable price for the brand of graphite in question. This does not however mean that this price will be acceptable to us at this juncture, for testing an additional brand of graphite might be considered as a sort of luxury. The main reason, however, why I am unable to offer any opinion as to what price would be acceptable for four tons, is the fact that this will largely depend on the price and delivery time which the National Carbon Company will be able to quote on a forty ton basis. Naturally if we can get a good bid for forty tons we will be more anxious to go to the trouble of testing four tons of the new brand of graphite than if the bid for forty tons is not particularly favorable.

You will understand that in the circumstances I cannot make a strong plea, as I did last year, in favor of the National Carbon Company letting us have four tons of this material as a gift, and have to leave it entirely to your judgment whether you wish to take up the matter with the National Carbon Company. I need not say how much I appreciate the attention which you are giving to our problem.

Yours very truly,

L. H.

(Leo Szilard)

1 encl.

UNION CARBIDE AND CARBON RESEARCH LABORATORIES, INC.
CARBIDE AND CARBON BUILDING
30 EAST FORTY SECOND STREET
NEW YORK

December 6, 1940

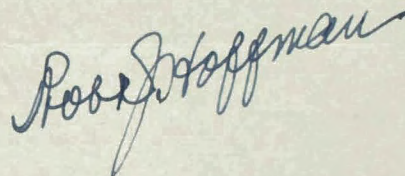
Mr. Leo Szilard,
King's Crown Hotel,
420 West 116th Street,
New York, N. Y.

Dear Mr. Szilard:

In further reference to your request of December 2nd, 1940, for prices and delivery of graphite and my letter of December 5th, 1940, our Messrs. H. G. MacPherson and V. C. Hamister will arrange for an appointment with you to discuss the subject.

Accordingly, either Mr. MacPherson or Mr. Hamister will communicate with you directly.

Very truly yours,



RJH:1

UNION CARBIDE AND CARBON RESEARCH LABORATORIES, INC.
CARBIDE AND CARBON BUILDING
30 EAST FORTY SECOND STREET
NEW YORK

December 6, 1940

Mr. Leo Szilard,
King's Crown Hotel,
420 West 116th Street,
New York, N. Y.

Dear Mr. Szilard:

As per the request made by you on your recent visit to my office, I am herewith enclosing a copy of your letter dated October 18, 1939, addressed to Mr. William F. Barrett, Vice President, Union Carbide and Carbon Corporation. I am also enclosing a copy of the memorandum which accompanied the above mentioned letter.

With respect to your other request for opportunity to contact a member of National Carbon Company's research organization, our Messrs. MacPherson and Hamister will make arrangements to visit you as stated in my letter of even date.

Do not hesitate to call on me if I can be of any further service.

Very truly yours,

Robert Hoffmann

RJH:l

COPY

KING'S CROWN HOTEL
420 West 116th St.
New York, N.Y.

October 18, 1939

Mr. William F. Barrett, Vice President,
Union Carbide and Carbon Corporation,
30 East 42nd Street
New York City

Dear Mr. Barrett:

Enclosed I am sending you a short memorandum referring to the conversation which we had on Monday this week. We have calculated how much graphite we would need for the preliminary experiment, which we propose to start immediately, and find that we could probably manage with 4 metric tons. As you will see from the enclosed copy of a letter of the National Carbon Company the price quoted for this amount of graphite is about \$3500.00. As soon as you let us know whether we can have this amount of graphite we would take all the necessary steps for preparing this experiment.

I have telephoned to your office today and left a message with Mr. Mills in order to ask you whether you would care to meet Professor Pegram, who is in charge of the Physics Department at Columbia University, and Professor Enrico Fermi one of these days for lunch at the Faculty Club. If you let me know what days would be convenient to you I would find out when the others are free and communicate with you.

On Friday I have to leave for Washington where a meeting has now been fixed for Saturday, but I hope to be back by Tuesday at the latest.

Yours very sincerely,

(signed)

(Leo Szilard)

(typewritten)

October 18, 1939

MEMORANDUM

Recent results concerning the possibility of setting up a nuclear chain reaction in uranium make it appear desirable that we should establish some sort of cooperation with the Union Miniere. Just what form of cooperation would be most appropriate has not been decided as yet. I have seen Mr. Jean E. V. Cattier, whose father is President of the Union Miniere, and arranged with him to meet in the near future the Managing Director, Mr. Sengier, who is now here on a visit.

It appeared desirable that the firms who use American uranium ores should be contacted before any definite arrangements are made with the Union Miniere, especially since, in an emergency, the United States might be cut off from Canadian and Belgian supplies. I was advised that most of the carnotites containing uranium are mined by the Vanadium Corporation of America, which is a subsidiary of the Union Carbide and Carbon Corporation. This was primarily the reason for my contacting the Carbide and Carbon Corporation.

A second reason for my contacting this corporation was the fact that an experiment is being considered for which about 50 tons of graphite might be required. This experiment also requires a large quantity of uranium oxide. It is assumed that it will be possible to obtain the uranium oxide required for this experiment as a loan from the Union Miniere. While it is impossible to say with certainty that this experiment will lead to a large scale liberation of nuclear energy, there is a good chance that this will be the case. Obviously, the success of the experiment would lead to a great increase in the value of uranium and would thereby directly benefit those who control the supply of uranium ores. The cooperation of the Union Miniere and of the Union Carbide and Carbon Corporation would appear to be justified on this ground alone, even without emphasizing the possible importance of these experiments from the point of view of national defense.

50 Metric tons of graphite, which might possibly be required for the experiment which is envisaged, represent a value of about \$16,000.00 if ordinary graphite is used, which rates at a price of 15 cents per pound. However, it seems that a special brand of graphite has

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to be used, for which the National Carbon Company quotes a price of 35 cents per pound; the value involved would then be about \$40,000.00. A letter of the National Carbon Company containing a price quotation is enclosed.

It seems impossible to foresee with certainty the outcome of the proposed large scale experiment, and it appears that we simply will have to have the courage to embark on it on a fifty-fifty chance for success and failure.

The estimate of the chances of this experiment might be slightly improved by investigating the properties of graphite in a separate experiment which we propose to start as soon as possible. This requires 4 metric tons of graphite of the grade specified in the enclosed letter of the National Carbon Company, and on the basis of the quotation contained in this letter this amount would represent a value of about \$3500.00. The Physics Department at Columbia University has at present no funds available for the purpose of this experiment, but it is believed that, if the National Carbon Company would consent to supply the graphite material, the other facilities required could be obtained from the Rockefeller Foundation or some other Foundation. An early decision on this point would be appreciated.

(signed) LEO SZILARD

UNION CARBIDE AND CARBON RESEARCH LABORATORIES, INC.
CARBIDE AND CARBON BUILDING
30 EAST FORTY SECOND STREET
NEW YORK

January 7, 1941

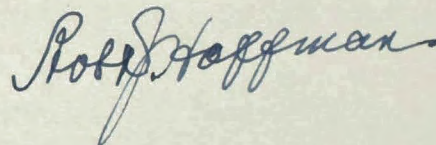
Mr. Leo Szilard,
King's Crown Hotel,
420 West 116th Street,
New York, N. Y.

My dear Mr. Szilard:

Mr. William F. Barrett has handed to me for attention your letter of December 28, 1940. Mr. Barrett wishes me to express his regrets that due to the press of other matters it will be difficult for him to arrange an appointment with you at this particular time.

Accordingly, may I suggest that you call at my office at your convenience and I shall be glad to discuss any aspects of your work and to arrange for such contacts as you may desire with the technical staff of our other units.

Very truly yours,



RJH:1

February 5, 1941

Mr. R. J. Hofman
Union Carbide and Carbon Corporation
30 East 42 Street
New York, New York

Dear Mr. Hofman:

Enclosed you will find a copy of a letter which we have received, for your information. Perhaps I could see you sometime next week in order to get your advice in connection with this matter.

Yours very truly

(L. Szilard)

L.S./eh

Enclosure

UNION CARBIDE AND CARBON RESEARCH LABORATORIES, INC.

P. O. Box 580

NIAGARA FALLS NEW YORK

September 5, 1941

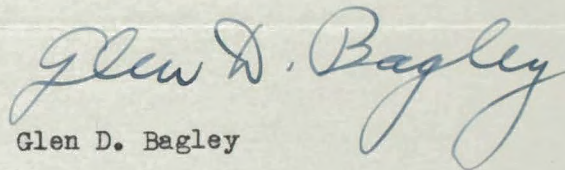
Mr. Leo Szilard
Columbia University
Department of Physics
New York, N. Y.

Dear Mr. Szilard:

In reply to your letter of August 26th regarding the uranium carbide, we had already made two tests on the production of this material in the powdered form but the reaction was incomplete. We shall now attempt to produce some fused material for you in different equipment.

I expect to be away from Niagara a good part of the next two weeks so that it would be difficult to arrange a meeting either here or in New York, but I hope to have some material suitable for your tests before long.

Yours very truly,


Glen D. Bagley

GDB:MWD

copied by mGB 9-30-41

R. L. 12

UNION CARBIDE AND CARBON RESEARCH LABORATORIES, INC.

P. O. Box 580

NIAGARA FALLS NEW YORK

September 19, 1941

Professor Leo Szilard
Columbia University
Department of Physics
New York City, New York

Dear Professor Szilard:

Under separate cover, we are shipping to you ten pounds of uranium carbide. This material appears to be quite pure with the exception that some decomposition of the carbide apparently occurred during cooling and free graphite was formed. We would appreciate it if you would advise us whether this material is satisfactory, after you have had a chance to test it.

Very truly yours,

GDB:DB-5

Glen D. Bagley
Glen D. Bagley

September 29, 1941

Mr. Glen D. Bagley
c/o Union Carbide and Carbon Research Laboratories, Inc.
P. O. Box 580
Niagara Falls, New York

Dear Mr. Bagley:

Many thanks for your kind letter of September 19th. We very greatly appreciate your kind collaboration in preparing for us some uranium carbide. We have received your shipment and shall get in touch with you again after we have carried out certain tests on this material.

We are very grateful indeed for your help in connection with this matter.

Yours very truly,



(Leo Szilard)

LS:MEB

CC: Dr. A. B. Kinzel

Copies

1 Pogram
1 Ferni
1 Szilard ✓
2 Mitchell