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December 16, 1939

Dr. R. S. Dean,
Bureau of Mines,
Salt Lake City.

Dear Dr. Dean:

The telephone connection in your recent call was so poor that I could scarcely hear your voice, but I understood you to say that Representative Leavy had made a protest regarding the Pullman project, and that you requested a suggestion from me as to what might be done to alleviate the situation.

You have been advised of my opinion that the allotment of funds for the magnesium program provides for an adequate staff, but the allotment for equipment and supplies is only a small fraction of the minimum requirement. More time and funds to equip the new quarters are required before any addition to the staff can be effectively employed.

Therefore I was greatly surprised at your suggestion that an addition to my staff be made at this time. The present staff is more than ample to carry on until the new quarters are completed and properly equipped.

Progress has been delayed not only by lack of sufficient funds but also by delays in obtaining forms, schedules, bids, and approval of purchase orders from the Washington Office. The enclosed memorandum illustrates the delays that have been encountered.

If the allotment of funds could be changed to approximate the intention of the Congressional Committee, as indicated by the following distribution taken from the appropriation record, I feel sure that our program will be greatly benefited.

	<u>Appropriation</u>	<u>Allotment</u>
Equipment and Supplies	\$19,740	\$ 4,735
Personal Services	9,760	16,740
Continuous Service	5,000	1,000
Travel	500	1,025
Totals	35,000	23,500

Very truly yours,

H. A. Doerner

Enc.

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December 15, 1939

Memo. from: Esther Laubach
To: H. A. Doerner
Subject: Delays incident to properly equipping the Pullman Laboratory.

The following tabulation, I believe, is self-explanatory:

LAUBACH'S TRANSFER:

June 12 - Received Dr. Dean's informal letter regarding transfer.
June 14 - Replied I would be ready to leave Salt Lake approx. July 9.
July 22 - Davis wired to await formal transfer orders.
July 29 - Formal transfer received by Laubach (in hospital).
August 16 - Arrived Pullman.
August 18 - Wired Pierson for list of forms and Schedule of Supplies.
August 25 - No response from Pierson - Wrote Secrest airmail for list of forms and Schedule of Supplies. Also requested Secrest to order a Postal Scale and Dating Stamp. Scale delivered November 6 and stamp delivered November 22.
August 28 - Received list of forms - ordered forms same day.
September 12 - Received part of the forms from Secrest.
September 28 - Received Schedule of Supplies - ordered supplies and furniture. (Orders not completed yet - Dec. 15).

PURCHASES:

August 21 - Ordered Underwood typewriter.
November 3 - Delivered typewriter.

Bids were sent out immediately upon receipt of forms.

October 10 - Opened bids for amalgam barrel - Pu-7, \$485.00 - Union Iron Works.
November 8 - Received approval from Washington.

October 27 - Bids opened for transformer - Pu-14, \$248 - Cascade Machine Co.
November 23 - Received approval from Washington.

October 28 - Requested approval of \$74.60, Pu-15 - Marshall-Wells
November 16 - Received approval.

November 2 - Opened bids for elec. switches, Pu-14, \$441.38 - Westinghouse
December 11 - Received approval.

November 10 - Opened bids for Generator, Pu-24, \$1,725 - Westinghouse
Not yet approved (Dec. 15)--the Company bid 90 days for delivery.

November 20 - Requested approval Pu-28, \$96.60 - Armstrong-Blum
December 12 - Received approval.

November 29 - Opened bids for Drill press Pu-29, \$306.40 - Union Iron Works.
Not yet approved.

November 25 - Requested approval Pu-33, \$75.00 - Marshall-Wells.
December 9 - Received approval.

BLODGETT'S APPOINTMENT:

September 11 - Started negotiations with the 11th Civil Service District
for employment of mechanic. First papers unsatisfactory.
September 26 - Selected Blodgett and notified Civil Service.
October 6 - Started communications with Blodgett.
October 18 - Blodgett accepted.
October 30 - Blodgett reported for duty, Dr. Dean and 11th Civil Service
District notified by wire.
November 13 - Blodgett and Reigel took Oath of Office (it was necessary
to borrow forms as our list of forms was not complete,
and still isn't - Dec. 15)
December 15 - No pay check yet received.

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UNITED STATES
DEPARTMENT OF THE INTERIOR

BUREAU OF MINES
WASHINGTON

December 18, 1939.

Hon. Chas. H. Leavy,

House of Representatives.

Dear Mr. Leavy:

In compliance with your request that you be furnished with a statement regarding the Bureau's program for magnesium investigations and the manner in which the funds appropriated for this purpose have been allotted and will be expended:

The Bureau's understanding of the purpose of the appropriation and the manner in which it should be expended to attain the maximum benefit was set forth in my letter of July 27 to you, in which I stated:

"It is not my understanding that this appropriation was made for the construction of a pilot plant at Pullman, Washington. The program of the Bureau, in support of which this appropriation was made, contemplated continuation on a larger scale of work done by Mr. Doerner at Pullman in the development of methods for the concentration of magnesite ores and the manufacture of high-purity magnesium metal from this concentrated material. The scale of operations contemplated was that of an engineering laboratory, which is the next step above the test tube scale on which Mr. Doerner has been working. To refer to this as pilot plant testing is incorrect and confusing. Strictly speaking, a pilot plant is a commercial or semi-commercial unit capable of expansion to a full commercial plant by the addition of identical or similar units. Construction and operation of pilot plant generally have been considered to be beyond the field of the Bureau and certainly would be beyond the scope of a \$35,000 appropriation. The use of this term in connection with Bureau investigations is unfortunate and conveys an erroneous impression of the Bureau's legitimate functions.

"As you know, this item of \$35,000 was added to the appropriation, "Mining Experiment Stations," by the Appropriations Committee of the House. On page 17 of the Committee report the following explanation is found: 'During hearings on the bill consideration was given to the desirability of research and experimental work in connection with the production of metallic magnesium from western ores. As a result of this inquiry the committee increased the estimate of \$395,000 for mining experiment stations by \$35,000 to provide adequate personnel and supplies for the initiation of this work. Adequate buildings conveniently located for the purpose have been provided at Pullman, Wash.' I do not understand this to earmark the entire amount for expenditure at Pullman. A very important part of

the investigation will be the preparation of a large number of magnesium alloys and testing of their physical properties. This work requires expensive equipment, available at other stations, that could not be duplicated at Pullman justifiably or within the limits of the appropriation. A considerable amount of metallographic work also will be needed that will have to be done at other stations, where the necessary equipment is available.

"The original allotment of \$23,500 to the Pullman office is subject to adjustment, if required, as the program develops. Of course, you understand that this appropriation must bear its proportionate share of administrative costs and that it is subject to the Budget requirement that a reserve of not less than 2 percent be set aside for contingencies. Inclusive of these items, \$35,000 will be expended by the Bureau during the current year in magnesium investigations. To attempt to do all of this work at Pullman would necessitate unjustifiable expenditures for certain types of equipment that are costly and are available elsewhere and would correspondingly reduce the funds for effective work."

In carrying out this program the following allotment has been made:

Pullman Office -----	\$23,500
R. S. Dean -----	9,900
Administrative -----	900
Reserve -----	700
Total -----	\$35,000

The \$23,500 allotted to Pullman was tentatively budgeted as follows:

Personal Services:

H. A. Doerner -----	\$3,800
E. F. Wilson -----	3,200
W. F. Holbrook -----	2,600
E. Laubach -----	2,100
2 General Mechanics (\$1,680) ---	3,360
1 Electrician -----	1,680
Total -----	\$16,740
Traveling expenses -----	1,025
Supplies and equipment -----	4,735
Continuous services -----	1,000
Total -----	\$23,500

Mr. Wilson, whose transfer from Pittsburgh to Pullman was approved by the Secretary, resigned, and this position has not yet been filled. Mr. Holbrook arrived at Pullman early in August and Miss Laubach soon thereafter. One of the general mechanic jobs is being filled by the appointment of Cyrus L. Blodgett, and the others will be filled as they are needed. The lapsed salaries of these positions are being used to augment the allotment for supplies and equipment.

Basic equipment including

Generator set -----	\$1,725.00
Hack sawing machine -----	93.00
Drill press -----	35.75
Shear -----	75.00
Electrical feeder distribution system	441.38
Clean-up barrel -----	485.00
Underwood typewriter -----	80.00
Furniture -----	203.50
Transformers -----	248.00
Power Drill -----	306.40
	<u>\$3,693.03</u>

has been ordered and money is available to purchase auxiliary items as needed. Dr. Dean reports that these orders were placed as soon as the type of equipment reasonable could be determined upon, but delivery is slow at this time due to the large number of rush orders received by the electrical and machine tool plants from the war in Europe.

The \$9,900 allotted to Dr. Dean was intended to be used for supplementary investigations of the properties of high purity magnesium metal and of magnesium alloys, utilizing special equipment and skills at other stations, the duplication of which at Pullman would be impossible within the limits of this special appropriation and in any event would be unjustifiable. There has been purchased for installation at Salt Lake City a high tension electrical melting furnace for making alloys, and rolls and other equipment for making and testing metals and alloy rods, bars, and shapes, as follows:

Electric furnace -----	\$18,385
Two-High rolling mill -----	8,935
Iron rolls -----	560
	<u>\$27,880</u>

The three metals being studied at present by the Bureau are manganese, magnesium, and chromium, and this equipment will be utilized for all three investigations. It is believed that up to one-third of this amount would be a legitimate charge against the appropriation for magnesium studies, as well as part of the time of the men who will be employed in this work. The \$9,900 allotment has been tentatively budgeted as follows:

Personal Services at Salt Lake City:

C. T. Anderson, 3 months -----	\$1,416.68
E. V. Potter, 2 months -----	1,100.00
V. Miller, 1 month -----	266.66
Labor, temporary -----	560.00
Traveling expenses -----	500.00
Supplies and equipment -----	6,056.66
Total -----	<u>\$9,900.00</u>

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Following our conference Tuesday afternoon, I telegraphed Dr. Dean to get in touch with Mr. Doerner and to do everything possible to expedite the the program at Pullman. I received a letter this morning from Dr. Dean, in which he states,

"Immediately on receipt of your telegram, I called Mr. Doerner on the phone, and found the situation exactly as I had expected. Mr. Doerner stated positively that he could not use efficiently any additional staff at this time, even if such additional staff were obtained without further depleting the funds for equipment and supplies. I offered to send one or more ^{of the} men at Boulder, experienced in the type of work which Doerner is doing, but he said that he could not use them to any advantage. Consequently, the staff at Pullman may be definitely considered to be complete so far as the present necessities are concerned. If would, of course, be possible to force more men on Doerner, but if we are to leave him in charge of the investigation, and I am not ready to suggest his replacement at this time, it would not seem good policy to take men off of other work just to be able to tell Representative Leavy that we had increased the staff.

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but
misleading

"With regard to expediting the installation of the engineering equipment for testing Doerner's process, neither Mr. Doerner nor I were able to suggest anything of importance. Practically all the basic equipment for the tests at Pullman is now on order. The transfer of \$3,000 from the Director's Contingent to the Pullman supply account which represented all of their lapsed salaries, will enable them to purchase the auxilliary items needed. It was Mr. Doerner's opinion that these auxiliary items would be delivered ahead of the basic elements, such as transformers and generators, and would not, therefore, delay the experimental program. I do not believe that any one can be reasonably blamed for the slowness of getting the equipment at Pullman installed. The orders were placed as soon as the type of equipment could reasonably be determined upon. Delivery on all equipment of this time is slow, due to the large number of rush orders received by the electrical and machine tool plants as a result of the war in Europe. We are finding it very difficult to get any sort of promise of delivery on such equipment as we have ordered for the building here at Salt Lake and doubtless we will experience the same difficulty at Pullman.

"It is my present plan to start on magnesium alloy research here right after the first of the year, to fulfill our obligation to spend the amount of the magnesium research money which was allotted to this Station for magnesium research. I believe that our division of magnesium research in this way is in the interest of efficiency, and would stand honest scrutiny by any one interested in promoting the magnesium industry, rather than prompting the expenditure of federal funds in a particular locality.

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"In accordance with your telegram, I shall plan to go to Pullman at the earliest date which will not seriously interfere with the work here, which right now is in a highly formative stage. I have asked Mr. Doerner to write me more fully on the subjects which I discussed with him on the phone. As soon as I have this information, I will be in a better position to determine what constructive action may be taken to help the Pullman situation."

Cordially yours,

JOHN W. FINCH, Director.

from: STATION HISTORY 1939-1940

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New Program.

The program was intended to extend over a three-year period, the first year being devoted chiefly to the design and construction of equipment. The latter consists of three large special electric furnaces and elaborate auxilliary apparatus. A machine shop, expensive electrical equipment, an ample stock of supplies, and a force of mechanics are all indispensable in such a project. Two junior neGINEERS employed by the College on this project had acquired valuable skills and experience. Since these men are available no further addition to the technical staff was required during the construction period.

Special Appropriation

This notable expansion of the program at Pullman was made possible by a special Congressional appropriation of \$35,000 intended to "provide adequate personnel and supplies for the initiation of research and experimental work in connection with the production of metallic magnesium from western ores." The College also allotted \$4,000 to provide suitable quarters for a machine shop and electric furnace laboratory in addition to the office, laboratories and staff previously supplied by the College.

The breakdown of the appropriation listed in the hearings of the House Appropriations Committee, and the funds actually allotted to Pullman are as follows:

Breakdown

Personal Services:

2 junior metallurgists (\$2,000 ea.)	\$ 4,000	
1 asst. clerk-stenographer	1,620	
1 senior millwright	1,800	
1 skilled laborer	1,200	
1 unskilled laborer	<u>1,080</u>	
Total		\$ 9,760
Travel		500
Supplies and Equipment		19,740
Continuous Services		<u>5,000</u>
TOTAL		\$35,000

Pullman Allotment

Personal Services:

H. A. Doerner	\$3,800	
E. F. Wilson	3,200	
F. W. Holbrook	2,600	
E. E. Laubach	2,100	
2 general mechanics (\$1,680 ea.)	3,360	
1 electrician	<u>1,680</u>	
Total		\$ 16,740
Travel		1,025
Supplies and Equipment		4,735
Continuous Services		<u>1,000</u>
TOTAL.....		\$ 23,500

The remaining \$11,500 were deducted for alloy research at Salt Lake City, and for administration and reserve funds.

The original breakdown of the appropriation is consistent with the requirements of the project, but the same cannot be said for the allotment sheet. The \$4,735 allotted for supplies was entirely inadequate, and the shop equipment purchased with that fund

could not be delivered and installed before January. The deficiency for supplies was made more acute by the premature increase in the staff assigned to Pullman.

The large staff provided in the allotment could not be utilized on the program until supplies and equipment were obtained. The salaries of Doerner, Wilson, Holbrook, and Laubach had been paid previously from regular funds of the Metallurgical Division. The allocation of funds from the special appropriation therefore released \$11,700 (salaries) in addition to the deductions of \$11,500, a total of \$23,200, which the Metallurgical Division would otherwise have had to pay out of other funds. Of the four salaries transferred to the Pullman account, those of Doerner and Laubach were to be expected, also a deduction of \$1500 for administration. The remaining \$15,800 were diverted to uses that did not contribute to the stated purpose of the appropriation, i.e., "Production of Magnesium Metal from Western Ores."

Final Allocation.

The unsatisfactory situation was improved as follows: The authorized addition of an electrician and mechanics to the staff was postponed. Wilson resigned. Funds equivalent to all lapsed salaries were finally transferred from the Director's contingent fund to the supply account. An additional \$1,750 was also obtained from the same source. Unused balances from travel and continuous services were also transferred to supplies. The final allocation resulting from these transfers is as follows:

Personal Services:

H. A. Doerner	\$ 4,091.66
E. F. Wilson (7/1--10/31)	1,066.64
W. F. Holbrook	2,741.68
E. Laubach	2,150.00
C. L. Blodgett (10/31-6/30)	1,124.66
E. A. Reigel (11/13--6/30)	<u>651.66</u>
Total	\$ 11,826.30
Travel	667.52
Supplies	12,656.18
Continuous Services	<u>100.00</u>
TOTAL\$ 25,250.00	

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