[redacted]

THE HARSHAW CHEMICAL COMPANY

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[redacted]

December 14, 1949

ECS:MJR

7405-Eq-276

Dr. G. R. Fernelius, Plant C Manager
The Harshaw Chemical Company
1000 Harvard Avenue
Cleveland, Ohio

SUBJECT: TARGET DATES FOR COMPLETION OF VARIOUS PROJECTS FOR AREA C

Dear Dr. Fernelius:

As was suggested in the conference of December 8th, 1949, I met with you and Mr. Parke on December 13th, to arrive at deadlines, or target dates, for the completion of action on the various projects discussed in this last conference. This letter confirms the order of precedence and the target dates which we arrived at. If, for any reason, it proves to be impossible to meet these deadlines, I wish you would let me know.

In the meeting I asked that priority be given to the following projects: the Buffalo Forge installation, the downstairs loading project, and the green salt production research. The first two tie in together and also include other projects, such as, revised duct work, experimentation with larger hexafluoride lines, a new receiver cleanout station, and rotating the order of the reactors in the hex area. All the above are dependant upon your getting the Buffalo Forge Scrubber into operation. It was agreed that you would plan to complete your modifications to the Scrubber by December 23rd, 1949, and that with the Scrubber running you could then begin revisions to the duct work, with the work on the ducts scheduled for completion on January 15th, 1950. In the meantime, it was agreed that you would start the actual construction of the downstairs loading station by the end of the year. On the green salt production research, it was agreed that you would have ten experimental reactors equipped with preheat and double orifices by the end of the year. Data will then be available for the next conference on January 11th, 1950.

Referring to the minutes of the December 6th conference, the following target dates were agreed on for Harshaw action:

1. Development of standard HF purge - this has been done and you are in a position to tie your program in with the Oak Ridge

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research when that is completed at the end of the year.

2. Sampling program in the green area for iron and boron analyses - sampling will be completed by December 20th, 1949.

3. Cell temperature control - a test cell will be equipped by January 11th, 1950.

4. Research to correlate cell temperature, HF content, and frequency of line plugs - data is being collected and Mr. Long will begin work on the project during the week of December 19th, 1949.

5. Revision to brown oxide specifications - it is hoped that the questions on this subject can be resolved at the contract negotiations on December 22nd, 1949.

6. Boron analytical program - Harshaw to begin analyses by December 20th, 1949. Samples have already been sent to New Brunswick.

7. Laboratory control procedure - Dr. Stillwell will reply to most recent AEC letter before end of year.

8. Improvement of upstairs loading hood - completed action on all recommendations by December 20th, 1949.

9. Sampling and analysis of roof deposits - report to be submitted by December 31st, 1949.

Other items not discussed specifically in the last conference were assigned the following target dates:

1. Completion of warehouse construction January 1, 1950.

2. Installation of Niagara Filters during year end inventory shutdown.

3. HF recovery system January 11th, 1950.

4. Installation of CO_2 system for Brown and Green Plants January 6th, 1950.

You were to give me the status of the following projects by December 16th, 1949: laboratory air conditioning, central vacuum system,

new sump liners, installation of agitators, and the collection of effluents from the still room vacuum pump.

I trust that it will be possible for you to meet the above schedule. I shall be glad to expedite matters in any way possible.

Very truly yours,

Edward C. Sargent
Cleveland Area Manager

CC: C. S. Parke
F. L. Belmore

STANDARD FORM NO. 64

This document consists of 7 pages
No. 2 of 8 copies, Series A

Office Memorandum [redacted] • UNITED STATES GOVERNMENT

TO : Those Listed Below

DATE: November 17, 1949

FROM : Edward C. Sargent, Manager, Cleveland Area ECS

SUBJECT: FOURTH MONTHLY CONFERENCE NOVEMBER 9, 1949

7405 Eng 776

REFER TO SYMBOL: ECS:MJR

The fourth monthly conference between the Harshaw Chemical Company and the AEC was held at Harshaw's Area C Offices in Cleveland on November 9, 1949, with the following attending:

HARSHAW CHEMICAL COMPANY	U.S.A.E.C.
W. J. Harshaw	H. M. Chadwell
C. S. Parke	J. P. Morgan
W. C. Hovey	M. Eisenbud
K. E. Long	D. Hunter
G. R. Fornelius	C. L. Karl
W. D. Stillwell	G. W. Toelken
	J. L. Chapman
	E. C. Sargent

The meeting began with a discussion of hexafluoride (RT-12) sampling. There had been a question raised as to the accuracy of the present methods. Dr. Fornelius reported that Harshaw had run HF contents on unpurged sample bottles and had found a maximum .036% HF content in one sample. He also stated that approximately 50% of the unpurged samples met the HF specification of 0.15%. Mr. Toelken then reported on the Oak Ridge test program. Oak Ridge had sampled directly from the shippers and had found that the HF content on these samples varied from the figure reported by Harshaw and Oak Ridge for the corresponding purged sample bottle. Oak Ridge's results for HF on the same sample are lower than Harshaw's according to Toelken. However, Oak Ridge had also found that their sampling and analytical accuracy was not good enough to determine whether or not the material actually met specification. Oak Ridge plans to continue their program for at least another month at which time it will be possible to determine whether Harshaw's sampling procedure should be changed, or whether the specification on HF should be changed. At the same time, Harshaw is to develop a method for giving the sample bottles a standard purge with HF analyses being made before and after each purge.

The need for repairing Harshaw's Fluoro-carbon Analyzer was then briefly discussed. It was decided that since the use of this instrument is for

TO FILE
JAN 23 1950

[redacted]

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STANDARD FORM NO. 64

Office Memorandum [redacted] UNITED STATES GOVERNMENT

TO : Those Listed Below DATE: November 17, 1949

FROM : Edward C. Sargent

SUBJECT: FOURTH MONTHLY CONFERENCE NOVEMBER 9, 1949

REFER TO SYMBOL: ECS:MJR

Harshaw's protection only, it would be left up to Harshaw to decide when they want it repaired.

Mr. Toelken then gave some results of iron analyses taken on Harshaw green salt at the New Brunswick Laboratory. It was found that only eighteen of the forty-five samples had a low enough iron content for metal production (less than 100 ppm). It was recommended that Harshaw take samples of green salt directly from the reactor tray for analysis at New Brunswick. In this way it will be possible to determine how much iron contamination is being introduced by the upstairs unloading hood.

Mr. Toelken also gave some results of nickel analyses for Harshaw green. The nickel content varied from eight to seventy-seven ppm. It was stated that this material would still be suitable for metal production and pile use with nickel contents of this order.

The operation of the Hex Plant fluorine cells was then discussed. Harshaw reported that they had all fifty-two cells operating with two more in standby. They also reported an approximate cost of $4200.00 for a recommended temperature control system for the cells. Harshaw will test this system on one set of cells before making a final recommendation.

In connection with cell operation, Mr. Long mentioned the possibility that the HF content of the fluorine might be causing some of the line plugs. Mr. Long stated that the HF content would increase with higher cell temperatures which are to be expected in the summer months. Since this may be a major cause of the summer production troubles, it was requested that Harshaw conduct a program which would show the effect of cell temperature on the frequency of line plugs.

Mr. Harshaw then began a review of the minutes of the last conference held on October 4, 1949.

Concerning the 100,000 lbs. of unreactive brown oxide, Dr. Fernelius informed the AEC that it would take approximately six months to work

[redacted]

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STANDARD FORM NO. 64

[redacted]

Office Memorandum • UNITED STATES GOVERNMENT

TO : Those Listed Below

DATE: November 17, 1949

FROM : Edward C. Sargent

SUBJECT: FOURTH MONTHLY CONFERENCE NOVEMBER 9, 1949

REFER TO SYMBOL: ECS:MJR

off this material by blending it in with re-run green salt. While the currently produced brown oxide is sufficiently reactive to make acceptable green salt, it still does not appear to be as reactive as Mallinckrodt brown. It was felt that Harshaw should continue to experiment with their brown process with the hope of making a more reactive product, thereby possibly increasing green salt production.

Mr. Harshaw then reviewed the recommendations for improving the Area C laboratory. Dr. Fernelius reported the receipt of a $10,277.00 low bid for air conditioning the lab. The contractor submitting this bid plans to use activated charcoal for scrubbing the incoming air. Mr. Harris of the AEC is to check on this proposal. The other laboratory recommendations for an additional hood, new balances, and white laboratory clothing have either been accomplished or are being handled by the joint action of Harshaw and Cleveland AEC.

In answer to Mr. Kelley's question concerning the maximum capacity of the Hex Plant, it appears that a running average of 8800 lbs. per day can be maintained but with no margin of safety. This figure was substantiated by the October production.

The question of "secondary specifications" for brown oxide was then raised. It was decided that the wording of these specifications does not imply that Harshaw run the actual analysis. After some discussion which indicated that Harshaw and AEC were not in accord as to the interpretation of Secret Letter, Modification No. 8, it was decided that further clarification or modification was indicated. AEC agreed not to ask Harshaw to demonstrate their ability to meet these specifications until the AEC Production and Legal Divisions clarify the exact meaning of, "Demonstrate their ability," as regards the liability of the contractor. In the meantime, Harshaw is to give the AEC a letter stating that they are not ready to demonstrate their ability to meet these secondary specifications and that there is further need of clarification. Since the shotgun test specification is the only one in serious question, as a result of an indication of high boron content, it was decided that the AEC and Harshaw would embark on the following

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STANDARD FORM NO. 64

Office Memorandum [redacted] • UNITED STATES GOVERNMENT

TO : Those Listed Below

DATE: November 17, 1949

FROM : Edward C. Sargent

SUBJECT: FOURTH MONTHLY CONFERENCE NOVEMBER 9, 1949

REFER TO SYMBOL: ECS:MJR

program for the determination and elimination of boron:

1. AEC will supply Harshaw with instructions for running boron analyses. Analyses may be run at New Brunswick at present.

2. Harshaw is to run boron analyses on all raw materials used in the brown oxide process.

3. Harshaw is to obtain samples which would indicate whether or not boron is removed in the green salt step. (If so, specification might be relaxed).

Concerning Harshaw's laboratory responsibility for certifying AEC materials, it was decided in the last meeting that the AEC would submit a counter proposal to that given by Harshaw in a letter of September 26. The AEC's proposal was turned over to Harshaw in rough draft form for their comments.

Dr. Fernelius then submitted the following production figures for the month of October:

Green Salt	167,446 lbs.
Hexafluoride	221,376 lbs.
Brown Oxide	80,978 lbs.

He then discussed the effect of physical inventories such as the one just completed on the production capacity of the processes. In answer to his questions, the AEC stated that there would be another complete inventory at the end of the calendar year and that complete inventories would be taken every six months unless unusual losses occurred. The AEC also stated that they would be in a position to place the direction of the next inventory under other personnel. In order to reduce the down time in the Brown Plant, it was agreed that the Niagara Filter installation would be delayed by about two weeks so that the resulting shut down would coincide with the year end inventory. (I have learned that year end inventory will be required in the brown step as routine

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STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : Those Listed Below DATE: November 17, 1949

FROM : Edward C. Sargent

SUBJECT: FOURTH MONTHLY CONFERENCE NOVEMBER 9, 1949

REFER TO SYMBOL: ECS:MJR

even though the accountability record for this Plant has been good).

Dr. Fernelius then submitted the following accountability figures:

	BROWN		GREEN		HEX	
	Since Jan.1	Oct.	Since Jan.1	Oct.	Since Jan.1	Oct.
Unaccounted Loss, lbs.	1511	1069 (gain)	410	425 (gain)	23941	198 (gain)
Measured Loss, lbs.	3393	63	1218	56	5137	1180
Process Efficiency, %	94.5	95.93	99.26	98.84	94.86	94.03
Scrap, %	4.1	5.19*	0.6	1.44*	2.91	5.35*
Measured Loss, %	0.97	0.06	0.1	0.04	0.39	0.74
Unaccounted Loss, %	0.43	1.20 (gain)	0.04	0.32 (gain)	1.84	0.12 (gain

*High scrap figures for October resulted from cleanup for inventory.

A general discussion of losses followed. (The implication that the loading of green salt into the hex reactors was done in the vicinity of sewers has been shown to be erroneous). Dr. Fernelius stated that it was his hope that the Buffalo Forge Scrubbers, when installation is complete, would pick up 2/3 to 3/4 of the large loss now experienced in the Hexafluoride Plant. The installation of these scrubbers is nearly completed but it will be necessary to revise the duct work somewhat. It was proposed that Mr. Harris give his recommendations on this on his November 10th visit to the Plant. Concerning other sources of losses, Dr. Fernelius stated that sewer samples showed approximately 0.1 ppm metal leaving Area C for all processes. He also brought up the possibility of scrubbing and recovering the metal content from the roof.

Mr. Rissmbud then spoke on the medical situation in Area C. He stated that exposures were nearly as high as they were a year ago. He gave as an example the exposure at the brown loading station where tolerance was exceeded by a factor of 154 before the installation of the hood and by a factor of 140 after the installation. Following this example he noted five recommendations which had not been accomplished to the complete

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1110338

STANDARD FORM NO. 64

Office Memorandum [redacted] UNITED STATES GOVERNMENT

TO : Those Listed Below DATE: November 17, 1949

FROM : Edward C. Sargent

SUBJECT: FOURTH MONTHLY CONFERENCE NOVEMBER 9, 1949

REFER TO SYMBOL: ECS:MJR

the metal deposited on the roof and that they should investigate the possibility of high cell temperatures causing plugs and resultant losses.

Dr. Morgan then stated that it would be necessary to make all the green salt possible at Harshaw, since the heavy hexafluoride production was cutting the inventories and exceeding existing capacities. From the discussion it appeared that the maximum capacity of the Harshaw Green Plant, under the present operating conditions, is no more than 5800 lbs. per day. It was asked, however, that Harshaw study the conditions for producing a more reactive brown oxide which would then give higher green salt production.

The meeting closed with a discussion of the green salt moisture specification. It was pointed out that several of the recent green lots were over specification in moisture and, thus, could not be accepted. It was then agreed that this specification would be removed for both Harshaw green and green received by Harshaw.

W. J. Harshaw
H. M. Chadwell
J. P. Morgan
G. R. Fernelius
M. Eisenbud
C. L. Karl

[redacted]

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Number 1 of 2 copies, Series [illegible]

THE HARSHAW CHEMICAL COMPANY

W. J. HARSHAW
PRESIDENT

[illegible] EAST 6TH STREET
CLEVELAND 6, OHIO

SECRET

[redacted] November 11, 1949.

"Th[redacted] contains information affecting the National Defense [redacted] States. Its transmission [redacted] contents in [redacted] unauthorized person is prohibited and [redacted] result in severe criminal penalties [redacted] applicable Federal Laws.

U. S. Atomic Energy Commission,
New York Operations Office,
P. O. Box 30,
Ansonia Station,
New York 23, N. Y.

Attention: Mr. F. M. Belmore.

7405 Eng-275

Gentlemen:

In light of the discussion at the November 8th joint AEC-Harshaw meeting, the Harshaw Chemical Co. is of the opinion that the definitions and specifications of PB-13 as contained in Secret Letter Modification No. 8 should be clarified or modified.

It will be recalled that Article III of Contract W-7405 eng-275 (see Supplemental Agreement No. 32) specifies that "the meaning of code symbols....PB-13....shall be set forth in Secret Letter....". This means that both Harshaw's contractual obligations, and A.E.C.'s authority to reimburse Harshaw, insofar as specifications are concerned, are spelled out by the Secret Letter.

Reference to PB-13 in Secret Letter Modification No. 8 is made up of two parts, one of which specifies that the material shall assay not less than 97% free MO_2, shall have a Molybdenum content not greater than six parts per million, and that "the material should be of a purity sufficient to enable it to be used in the manufacture of MF_4 and MF_6 which will pass Contract No. W-7405 eng-275 specifications therefor". The second part of the PB-13 specification goes on to state "over periods to be designated by the Commission the Contractor shall demonstrate its ability to meet following specification:

Assay as free MO_2 97.0%

etc., etc.".

A.E.C. representatives at the meeting mentioned above, explained this two part definition as representing first, a normal "working specification", and secondly, a long term objective to be attained, but suggested that A.E.C. would have the privilege of fixing a time at the end of which it could require material meeting the more stringent requirements of the second part of the specification.

Meanwhile, we have felt that the language requires us to demonstrate during periods fixed by A.E.C. whether we have the ability to

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THE HARSHAW CHEMICAL COMPANY

CONTINUING A LETTER ON

TO [illegible]-NY
Attention: Mr. F. M. [illegible]

November 11, 19[illegible].
Page Two.

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meet the more stringent specifications in order that A.E.C. may be advised whether, at the end of any such demonstration period, it should suggest inclusion of the higher specifications by amendment. We feel that the other interpretation is untenable, since it would assume that we had agreed to meet a specification before we had acquired the ability to do so. This is particularly pertinent in light of the possible variations in M feed-stock, over which the Harshaw Chemical Co. has no control. Obviously we would not have agreed to such a requirement, and obviously you would not have asked us to do so.

Can you please review this situation and initiate suitable action for the modification of Secret Letter Modification No. 8 so that it cannot be misinterpreted in the future? The Harshaw Chemical Co. is anxious to comply with the requirements of the Atomic Energy Commission but feels that a clarification of these requirements at the present time would avoid future misunderstandings.

Very truly yours,

W. J. Harshaw.

President.

WJH:MFS

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"CAUTION"

~~"This [illegible] affecting the [illegible] States. Its [illegible] contents in any manner to [illegible] person is prohibited and may result in severe criminal penalties under applicable Federal Laws.~~

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W. E. Kelley, Manager of New York Operations October 19, 1949

Walter J. Williams, Director of Production, Washington

REPORTS OF ANALYSIS BY HARSHAW CHEMICAL COMPANY

SYMBOL: P:JLK

7405 - Eng - 276

As your office has been informally advised, we have had some discussion with representatives of the Fraud Section, Claims Division, Department of Justice relative to possible claim by the Government against Harshaw Chemical Company for false reports of analysis submitted by that Company. It was indicated by these representatives that the claim of the Government might possibly be for as much as $342,000. This was arrived at by interpreting the contract as not requiring any payment for the $89,000 of sub-specification green salt, doubling that amount under the false claim statute and by considering each false report of analysis as incurring a penalty of $2,000. It was also indicated that possibly the $2,000 penalty might be asserted for each voucher which represented payment in any part for sub-specification material. We understand Harshaw has informally indicated some thought of a deduction of a quarter of a cent a pound for each pound of sub-specification green salt. The Department of Justice will want to know our general attitude in determining the amount of the settlement that might be made with Harshaw on this matter. When the Department has some idea as to our thinking on the matter, it intends to call Harshaw in for a conference. As a practical matter, the Department has exercised considerable latitude in determining the proper amount for settlement.

We would suppose that some consideration should be given to the necessity of making clear that a matter such as this is not to be treated lightly; on the other hand, we would not want to effect so severe a penalty as to raise in the contractors' minds the rather severe risk of doing business with AEC. Consideration should also be given to the actual extent of the injury to the Government, to how aggravated a type of case it appears to be, to the undesirability of litigation since it might involve disclosure of restricted data, to future relations with Harshaw, and to the like.

We would appreciate your considering the various aspects of the matter and giving us some idea, even informally, of your thoughts on the matter.

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NEW YORK OPERATIONS
ATOMIC ENERGY COMMISSION

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This document consists of 2 pages
Copy No. 6 of 13 Series A
JLKELEHAN:hlb

7405-Eng-276

Dear Mr. Bereen:

We have your letter of September 28 concerning recent events at the Harshaw Chemical Company Plant at Cleveland. We understand your letter to have reference to the production at this plant of sub-specification uranium tetrafluoride in the process of producing uranium hexafluoride and to the fact that periodic assay reports to the Atomic Energy Commission did not reflect this information.

The matter first came to the attention of the Atomic Energy Commission in a meeting on July 14, 1949 between representatives of our New York Operations Office and the President and other representatives of the Harshaw Chemical Company. A preliminary investigation indicated that this condition had existed for some time but the extent of the injury, if any, to the Commission was not clear. The uranium tetrafluoride, green salt, is an intermediate material in the production of uranium hexafluoride for K-25 and this end product had met all product specifications. We were satisfied that no loss or diversion of uranium had taken place, both because of the nature of the process and the fact that the source and fissionable material balance reports were satisfactory. There was some possibility that the falsification of the records had caused some financial loss to the Government. Accordingly, on July 25, the FBI was informed and after formal investigation, made a report of its findings. In addition, an investigation of administrative and financial aspects of the case has been made by our own staff. The reports of these investigations show the pertinent facts to be as follows:

The contract with Harshaw, bearing an effective date of January 5, 1944, first provided for the manufacture by Harshaw of uranium hexafluoride from green salt furnished by the Government. It was later amended to provide for the manufacture by Harshaw both of uranium hexafluoride and of green salt of stated specifications with the option reserved to the Government of accepting, at a reduced price, green salt not meeting the specification. While the specification originally was placed in the contract at the request of Harshaw at the time the Government furnished the green salt, it was continued in the contract for two reasons: primarily, so that the green salt produced would be of sufficient purity so that it could be diverted to metal production in the event of an emergency, and secondarily, it appears that the cost of manufacturing uranium hexafluoride may be increased somewhat if green salt of less than

DEC 12 1949

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the required purity is used. Under the contract, Harshaw is paid a unit price for the end product. The price is subject to redetermination every three months after review of the cost experience of that quarter.

From the investigations which have been made, it appears that the condition in question may have existed for some time but the only positive proof of its existence is from April 19 through July 12, 1949. On the former date and following a change in sampling methods, two lots of uranium tetrafluoride were discovered by the Company to be below contract specifications.

The assay reports to the AEC did not reflect this fact. It appears that officers of the Company became aware of the condition early in June, 1949, but did not report it to AEC, their stated reasons being that remedial action would reduce production of the end product; the end product was satisfactory; uranium metal was being properly accounted for, and they wanted to await a favorable opportunity to discuss the matter in a meeting with the Manager of our New York Operations Office.

There is no present evidence that the Company has profited or gained any tangible advantage as a result of these actions. There is some basis for concluding that the cost of production of uranium hexafluoride was increased by the use of the sub-specification green salt although the Company has asserted the contrary to be the case. However, since the price for the Company's products was fixed in advance for the period during which it was discovered that the sub-specification material was produced, there is no present evidence that the operation has as yet affected the cost to the Government.

We are obtaining the views of the Department of Justice as to the civil aspects. In the meantime we have taken necessary action to protect the interests of the Government, including the withholding of funds to cover the sums, if any, that may be found to be owed the Government under certain false claims statutes

Harshaw Chemical Company has been producing green salt meeting specifications since September, 1949. Commencement of operation of the AEC Laboratory at New Brunswick has permitted institution of a procedure whereby a portion of the sample taken to the plant

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laboratory is forwarded to the AEC laboratory for assay. We are reasonably confident that this procedure, together with the closer supervision to be given this contract, should ensure that the Company meets the specifications in the contract.

We will be pleased to supply any additional information which you may request, and we will keep you advised of further developments.

Sincerely yours,

Carleton Shugg
Deputy General Manager

Mr. William L. Borden
Executive Director
Joint Committee on Atomic Energy
U. S. Capitol
Washington, D. C.

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CONGRESS OF THE UNITED STATES

Joint Committee on Atomic Energy

September 2[illegible], 194[illegible]

Mr. Carroll L. Wilson
General Manager
Atomic Energy Commission
1901 Constitution Avenue, N. W.
Washington, D. C.

Dear Mr. Wilson:

For the record, I would like to call your attention to the fact that only last week, as a result [illegible] Staff members to the Harshaw Plant at Cleveland, has the Joint Committee become aware of an [illegible] development at that installation.

I believe I am correct in saying that the FBI was notified of this [illegible] on July [illegible], 194[illegible], and, more recently, the Department of Justice has been studying the situation. Nevertheless, the Joint Committee has not re[illegible] formal word except for oral advices given Staff members by reason of their recent [illegible].

Sincerely yours,

/s/ William L. Borden

Executive Director

Received Off. Gen. Counsel

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OCT 11 1949

NEW YORK 32 N. Y.
NEW YORK OPERATIONS
[illegible] CHECK COMMISSION

[redacted]

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[redacted]

F. M. Belmore, Director, Production Division
New York Operations Office
Edward C. Sargent, Manager
Cleveland Area
HEALTH CONDITIONS IN HEX PLANT

October 14, 1949

7405-Eng-276

REFER TO SYMBOL: ECS:MJR

I should like to supply various facts and observations to supplement our 'phone conversation on the above subject.

In general, an examination of the health problems in this plant leads one to a single conclusion, which is, that a new plant should be built as soon as possible. Possible improvements on the present plant would cost quite a bit of money and would not eliminate all the problems. For the present I recommend the following:

1. Constant supervision and careful study to improve operator's techniques with the objective of eliminating leaks and spills.

2. A careful study of the recovery system and improvements thereon, which would not only reduce losses, but would also reduce exposure.

Number one recommendation has been re-emphasized to Harshaw and we are getting good cooperation. Studies are being made at both this office and Harshaw of all operating techniques to find possible ways to reduce exposure. Recommendation number two has been stressed to Harshaw and is being followed by Mr. Chapman. The present recovery set-up is confused, and in some part, poorly engineered. Possibly Mr. Chapman can supply some of the engineering that has been lacking on this work.

Concerning green handling in the hex area, you will recall that in PC-4 Harshaw proposed tying in the upstairs loading and unloading station with a central downstairs station. This would involve a chute, way-hopper and loading hood. In order to install this downstairs unit it would be necessary to remove one bank of six reactors in the old section of the plant. The downstairs part of this proposal has been held up because it was felt that full capacity would be needed in the old part of the hex plant during the construction of the new plant in the annex. While this objection apparently does not apply anymore, this office still does not favor the idea because a central loading station would mean transporting loaded and unloaded

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1110347

CONFIDENTIAL

October 14, 1949

F. M. Belmore

Edward C. Sargent

HEALTH CONDITIONS IN HEX PLANT

REFER TO SYMBOL: ECS:MJR

trays from as far away as the annex with resultant general contamination.

Under present conditions this contamination would be considerable since the vacuum system for ash removal is still not functioning properly. The difficulty lies mainly in the Micro-collector which often sprays ash into the atmosphere. I have also observed a back-blow of ash into the plant. Medical should be pushed in their study of the Micro-collector problem.

The present method of green loading in the hex area causes considerable dusting. However, it is preferable to the mechanical loading system tried in the past. The mechanical loader involved a blind operation. The trays were filled in the reactor and it was impossible to prevent overloading where high spots of unreacted green existed.

For the present I recommend continuing the present practice of manually loading the green under the hoods. It may be advisable to equip the operators with air masks during this one operation, but I feel that continual use of these masks would greatly retard production. This office is counting on a great improvement in both health and safety and accountability when the Buffalo Forge installation is completed. This system will pull continuously through the small hoods on the minor leaks from the reactors. This system will also carry the flexible hoses which can be moved as needed to cover serious leaks from breaks, ice trap clean-outs, etc.

I trust that the above program will meet with your approval and with Medical's. Unless I hear to the contrary, I will continue on this plan. I would, however, appreciate it if Medical would supply Harshaw with the facts on the matter, that is, who is overexposed, what is the extent of the overexposure, and what is the basis for their findings.

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OCT 15 1949

CONFIDENTIAL

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FORM AEC 210

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(Insert [redacted])

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U. S. ATOMIC ENERGY COMMISSION
CLASSIFIED MESSAGE

#649

SIGNATURE OF CERTIFYING OFFICIAL

F. M. Belmore

F. M. Belmore, Director, Production Division

DATE OF MESSAGE

OCTOBER 11, 1949

FROM:

W. E. KELLEY, NYOO, NEW YORK, N. Y.

TO: U. S. ATOMIC ENERGY COMMISSION
1901 CONSTITUTION AVENUE, N. W.
WASHINGTON, D. C.
(ATTENTION)
(WA-231) FOR: CARROLL L. WILSON

MESSAGE
(Must be typed double space and line length not to exceed 6½")

UNACCOUNTED FOR LOSS IN HARSHAW HEXAFLUORIDE PLANT FOR MONTH OF SEPTEMBER REPORTED AS SIX THOUSAND EIGHT HUNDRED THIRTY SIX POUNDS. SINCE THIS IS IN EXCESS OF AMOUNT NORMALLY EXPENDED IN OPERATIONS, WE HAVE NOTIFIED CLEVELAND FBI OFFICE END REF P-FMB FOR WILSON FROM KELLEY

CC: Director of Security, Washington
Director of Production, Washington
~~R. W. Kirkman~~

Belmore:jvd
3:00 p.m.

(Do not type below this line)

• Complete if CONFIDENTIAL (when originator deems it necessary) or if message bears higher classification. See additional instruction on reverse side.

[redacted]

(Set classification)

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