

Review - in PR procedure
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THE AEROSPACE CORPORATION



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30 September 1985

Mr. Arthur Whitman, NE-24
Division of Facility & Site
Decommissioning Projects
U.S. Department of Energy
Germantown, Maryland 20545

Dear Mr. Whitman:

AUTHORITY REVIEW - THE FORMER SUPERIOR STEEL
CORPORATION SITE - AEC CONTRACT NO. AT(30-1)- 1412

Aerospace has completed assembly and analysis of available documentation, and prepared the subject review for your consideration and determination if there is authority for remedial action under FUSRAP at the former Superior Steel Corporation facility in Carnegie, Pennsylvania.

As indicated in the attached review, the Superior Steel Corporation was one of three principal contractors involved in AEC's initial fuel element development program to fabricate strip and plate fuel elements for reactors. This work began in June 1952. Superior Steel and Metals & Controls Corporation were the principals in the rolling and cladding of uranium metal strip and plate elements. According to the Savannah River Operations Office, Superior Steel contract files have been destroyed. However, correspondence files relating to the work done by Superior Steel indicate that they rolled, cut and finished uranium metal into strip and plate under a unit price contract. Metals & Controls, operating under a cost-plus-fixed-fee contract, performed cladding and plating operations on the uranium strip and plate using their patented processes to produce the finished fuel elements. The contract with Superior Steel was terminated in September 1957. However, no documents have been discovered to indicate close-out procedures or the results of a final radiological survey and clean up of the facility, if such activities were a part of the contract close-out process. A preliminary survey of that portion of the Superior Steel facility used under the AEC contract, conducted in July 1980, indicates the presence of radioactive contamination above current guidelines and criteria at several locations on the site.



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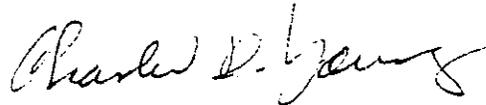
Without copies of the initial contract and subsequent modifications, the presence of indemnification provisions therein cannot be determined with certainty. However, considering the type of contract, period of performance, known circumstance and terms of the Metals and Controls contract, the presence of such provisions is unlikely.

The radioactive contamination at the site of the former Superior Steel facility was the result of DOE predecessor related operations. However, other factors considered in the authority analysis are not supportive of a finding of authority for remedial action under FUSRAP.

Based upon your authority determination, Aerospace will prepare a designation package, or a summary report to notify the State of Pennsylvania and the Environmental Protection Agency if you determine there is no authority for remedial action under FUSRAP. The attached Authority Review is being provided to Mr. S. Miller of DOE-OGC by copy of this letter.

I would be happy to respond to any questions you might have regarding the content or format of the attached authority review package.

Sincerely,



Charles D. Young
Environmental Controls and
Analysis Directorate
Government Support Division

CDY/smb

Enclosures

cc: E. DeLaney
S. Miller
R. Lewis (w/o)

Whitman file

AUTHORITY REVIEW
THE FORMER SUPERIOR STEEL CORPORATION SITE
Carnegie, Pennsylvania

INTRODUCTION

The purpose of this review is to assemble and present information pertaining to work performed under the sponsorship of the Atomic Energy Commission (AEC) and the facts and circumstances surrounding activities/events that resulted in the radioactive contamination that remains on the site formerly occupied by the Superior Steel Corporation.

The principle sources of information/documentation assembled for this review were as follows:

- a. AEC records in the custody of DOE's Oak Ridge and Savannah River Operations Offices and the Atlanta and New York Federal Archives and Records Centers.
- b. Telephone interviews with former AEC employees who had personal knowledge of AEC sponsored activities at the former Superior Steel facility.

BACKGROUND

During early 1952, there was a rapidly increasing interest and demand for flat, plate-type reactor fuel elements. It was determined that this type of element provided a far greater surface-to-volume ratio than the conventional cylindrical slug; thus making possible a more efficient use of uranium in reactors. A production procedure for the fabrication of these elements was needed. According to an AEC (New York Operations Office, Production Division) memorandum, subject: Justification For Entering into Contract No. AT(30-1)-1413 with Metals & Controls Corporation Without Formal Advertising, dated December 31, 1952; Superior Steel and Metals & Controls were successful in their bids to perform work in this area. Apparently Letter Contracts No. AT(30-1)-1412 and No. AT(30-1)-1413 were awarded to Superior Steel and Metals & Controls, respectively, in June 1952. The referenced document indicates that only a few organizations in the United States had the technical background, experience and commercial success to roll and cladd metal strip and plate. Superior Steel and Metals & Controls were two of the three firms that responded favorably to the work proposed by AEC. Therefore, it is reasonable to assume that, although somewhat different with respect to scope of work, the same "boiler plate" articles were included in the Superior Steel and Metals & Controls contracts. An extract of the Metals & Controls Contract No. AT(30-1)-1413 is attached. Copies of the Superior Steel contract have apparently been destroyed.

The facilities owned and operated by the Superior Steel Corporation during the mid-1950's when work was done for the AEC are located in the area currently occupied by the Carnegie Industrial Park on Superior and Hammond Streets, Scott Township, Pennsylvania. A records search was conducted in 1980 to identify the specific area/building within this 25 acre complex that was used to conduct work for the AEC. The large steel structure that originally housed the uranium handling facilities was owned by Lang Machinery Company, Inc. of Coraopolis, Pennsylvania and , at that time, was occupied by J.G. Industries, Inc.

One document has been discovered that indicates Superior Steel's interest in doing work for the MED/AEC as early as March 1945. This initial interest appears to have been in the area of rolling stainless steel. However, no documents have been found that would indicate that they were under contract with MED/AEC before June 1952. Except for general correspondence and one report of a 1955 health and safety inspection of that portion of the Superior Steel plant where AEC work was done, little is known of the specifics of work performed and the contractual relationship between Superior Steel and the AEC.

It should be noted that, by mid-1952 the physical characteristics of uranium metal and measures required for the protection of workers from the hazards associated with handling and/or processing uranium metal were reasonably well documented, thus relieving somewhat the necessity for strict AEC controls and technical supervision practiced during the 1940's.

CONTRACTS

According to information provided by the DOE Savannah River Operations Office, the effective date of AEC Contract No. AT(30-1)-1412 with Superior Steel was June 27, 1952. There were 7 amendments or modifications to the contract. The contract was terminated on or about September 30, 1957. The total payments to Superior Steel through fiscal year 1957 amounted to \$356,849.00.

According to general correspondence, work done by Superior Steel was of a developmental nature. This work was limited to the production of flat plates of uranium metal in support of the Savannah River Operations Office fuel element development program. With the exception of some special equipment provided by AEC, the facilities and equipment used in support of this program were owned and operated by the Superior Steel Corporation.

The type of contract was unit price with certain features with respect to purchase of equipment. The scope of the contract provided by the Savannah River Operations Office is quoted in part as follows:

"...by commercial methods receive uranium from supplier, inspect, straighten as required, scalp by milling, planing and/or spot grinding, preheat in molten salt, hot roll

(taking required temperature and time data), crop and shear to length, number, acid pickle (including packing for shipment to heat treating facility and receiving heat treated strip), flatten, acid pickle, machine into full length strips of specified dimensions and tolerances, deburr, gauge finish inspect, metallurgically sample (but not in excess of reasonably commercial sampling methods and not including metallurgical tests), package and prepare finished plate and furnish labor for packaging and preparing scrap for shipment."

The contract, originated by the AEC's New York Operations Office, was transferred for administration to the Oak Ridge Operations Office. On October 15, 1954, it was transferred to the Savannah River Operations Office. According to the Savannah Operations Office, the official contract file has been destroyed.

Metallurgical Laboratory and Superior Steel correspondence from the spring and summer of 1954 indicates that Superior Steel proposed an increase in contractual requirements from development to production quantities. The proposals called for minimum production quantities over a five year period at a fixed unit price of production and additional equipment and facilities. However, the AEC rejected the proposal and Superior Steel continued production on a developmental basis.

Security inspection records (3 documents) obtained from the Savannah River Operations Office indicate that Superior Steel was engaged in general work on rolling and possibly cladding of the new type fuel elements. This document indicates that the work was initiated in March 1953. One of these documents indicates that security inspections of the Superior Steel facility at Hammond and Gregg Streets, Carnegie, Pennsylvania, were conducted in May and November 1954 and 1955, in June 1956 and in January 1957. This document also indicates an authority covering receipt, storage and transmittal of classified matter categorized up to and including Secret. Another entry in the document, 11/29/57 - Deletion of Facility - apparently indicates withdrawal of authority for access to classified materials on or before that date. Superior Steel was an accountable station for handling SF material by November 1952.

Analysis of the limited amount of cost and production information on activities at the Superior Steel facilities indicate that operations in support of this contract were intermittent, for periods of from one to two days. There are also indications that the area or areas used were cleaned before and after each operation. Recollections of a former employee of the Savannah River Operations Office, who had visited the Superior Steel facility on at least two occasions to observe rolling operations, were that the facilities were only used on weekends when the plant would otherwise be idle. However, documents assembled to date indicate rolling operations were conducted during the week. He also

indicated that an AEC representative was present during each operation conducted for the AEC. Documentation indicating that such representation was a contractual requirement has not been found. However, the fact that Superior Steel was established as an accountable station for SF material would indicate some relief from the requirement for continuous AEC representation during receipt, processing, storage and shipment of uranium metal.

HEALTH AND SAFETY

The only indications of AEC involvement in health and safety matters at the Superior Steel facility are the provision of ventilation equipment and visits by representatives of the AEC Health and Safety Laboratory (HASL) to the facility. According to the HASL report of a visit conducted on September 19, 1955, the purpose of the visit, requested by Superior Steel and the Savannah River Operations Office, was to conduct an air hygiene survey during hot strip rolling of normal uranium slabs; to compare the results of this survey to previous HASL studies; to recommend additional controls and procedures based on the survey results; and to surface monitor the rolling mill during and after cleanup. The report indicates that prior visits had been conducted on May 13 and August 3, 1953, and on May 9, 1955. The Conclusions and Recommendations section of the report included the following statements.

"Excessive amounts of airborne contamination were found in all operational areas. The beneficial effects derived by the installation of local exhaust ventilation at the roughing roll have been more than offset by the introduction of a new dust source...."

"It is our opinion that in order to reduce the high airborne concentrations found during hot strip rolling, either some method of preventing oxidation must be used or recommendations 12 - 15 set forth in previous HASL reports (Nos. 1 and 2) should be complied with."

However, the report also indicates that after equipment used during the rolling operation was hosed down with water, only negligible surface contamination was found. This report was distributed to the Savannah River Operations Office with copies for Superior Steel.

There are no indications of AEC responsibility or involvement in monitoring the personal health of workers at the Superior Steel facility where uranium metal was processed.

RESIDUAL RADIOACTIVE CONTAMINATION

Radiological status of the Superior Steel facility at the time AEC contract No. AT(30-1)-1412 was terminated is unknown. No documents have been found to date that would indicate that final cleanup and a radiological survey of the facility was a part of the close-out procedures that were followed prior to termination of this contract. Information contained in the report of the HASL visit conducted in September 1955 indicates a significant potential for residual radioactive contamination at the facility due to the high concentration of dust during hot rolling operations and the "wash-down" procedures used to clean the equipment at the completion of a production run.

A preliminary survey of the facility was conducted by DOE on July 31, 1980. At the time of the survey, portions of the old roughing mill remained in the area. Subfloor pits, approximately 8 feet deep over which the former mill, brushing station, finishing stands and shear were originally located were being filled with rubble. Intent at that time was to eventually cap these pits with concrete at floor level. Several areas of significant radioactive contamination were found in the mill and rolling areas and a small storage shed attached to the western side of the building. Contamination in the former mill area was in and around the subfloor pits. Gamma radiation exposure rates of up to 8 times background were measured in the pits. Fill rubble prevented access to the bottom of the pits where higher radiation levels were expected. Gamma radiation in the area where finishing stands were located was measured at or near background levels. The subfloor pits in this area had been filled and covered with concrete. Gamma radiation levels to approximately 500 μ R/hour were measured in the pits in the former rolling area. A sample taken at the bottom of one of the pits contained a uranium concentration of 5800 pCi/gram (1.4% by weight). Gamma radiation exposure rates up to 400 μ R/hour were measured in the storage shed. A soil sample taken from under the wooden floor of the shed contained approximately 1100 pCi/gram of uranium (U-238). A more comprehensive radiological survey will be required to more accurately define the extent of residual radioactive contamination and determine the need for remedial action at this facility.

In view of the fact that the site of the former Superior Steel facilities have been developed into an industrial park and the limited information that is available on the AEC contract with this firm, it is unlikely that the current owners/tenants of the industrial park were aware of the potential for radioactive contamination prior to 1980 when the DOE radiological survey activities were initiated at this site.

AUTHORITY ANALYSIS

The determination of authority for remedial action at a candidate FUSRAP site is based upon an evaluation of the specific terms of the contract or contracts between MED/AEC and their contractors; confirmation that the residual radioactive contamination at the site did occur during

the performance of work sponsored by the MED/AEC; and the working relationship between MED/AEC or its agents and their contractors. The latter considerations specifically address ownership of facilities and equipment, the degree of control over contractor operations, and MED/AEC involvement in matters pertaining to health and safety at the contractor facilities.

The results of this review of available documentation and evaluation of factors cited above to determine DOE's authority for remedial action at the Superior Steel Corporation facility are addressed in responses to the questions that follow:

- a. Was the site/operation owned by a DOE predecessor or did a DOE predecessor have significant control over the operations on the site?

Response: The site/operations, including facilities and equipment, were owned and operated by the contractor, Superior Steel. Government furnished equipment provided to Superior Steel is believed to have been limited to ventilation equipment and facilities to reduce the potential for health hazards associated with the processing of uranium metal. Contract files have been destroyed. However, documents assembled to date indicate that control over Superior Steel operations by DOE predecessors was limited. Factors supporting this assessment of limited control are as follows:

- (1) Superior Steel was recognized as one of the few organizations in the United States with the technical background and experience and commercial success in rolling and cladding metal strip and plate.
- (2) The contract was a unit price contract with certain cost features with respect to purchase of equipment.
- (3) Security and health and safety inspections of the Superior Steel facility were conducted by the AEC. The results of health and safety inspections were presented to appropriate elements of the AEC and to Superior Steel in the form of opinions and recommendations.
- (4) By November 1952 an accountable station (SSP) was established at the Superior Steel facility. The significance of this factor is that, once established as an accountable station, the requirement for AEC representation to monitor the receipt, processing, storage and shipment of uranium metal at the facility on a continual basis was diminished.

(5) Several AEC letters and memoranda dated during the period July 1953 through February 1954 indicate that visits to the facility were controlled by the New York Operations Office and, to some degree, by Superior Steel management.

- b. Was a DOE predecessor agency responsible for maintaining or ensuring the environmental integrity of the site (i.e., were they responsible for cleanup)? *No!*

Response: No document has been found that specifically stipulates DOE predecessor agency responsibility for clean up of the site. Under terms of AEC contracts during the period, contractors were held responsible for health and safety and compliance with AEC policies and procedures directly related to maintaining the environmental integrity of the site.

Health and Safety visits were made at the Superior Steel facility and the results of inspections were transmitted to appropriate elements of the AEC and Superior Steel in the form of opinions and recommendations. Also during this period, AEC typically assumed financial responsibility for clean up of a contractor facility as a part of the contract termination process. Since copies of the contract with Superior Steel have been destroyed, precedence established by terms of contracts for similar work during the period appears to be the only means of assessing the level of AEC involvement in this area.

- c. Is the waste, residue, or radioactive material on the site the result of DOE predecessor related operations?

Response: Yes.

- d. Is the site in need of further clean up and was the site left in non-acceptable condition as a result of DOE predecessor related activity?

Response: No documents have been found that would indicate the radiological status of the site at the time the AEC contract was terminated. However, an AEC report of a visit to the site in September 1955 indicates a significant potential for residual radioactive contamination due to high concentrations of dust during hot rolling operations and the "wash-down" procedures used to clean equipment at the completion of a production run. Contamination apparently due to the latter was confirmed during a preliminary survey of the facility conducted in July 1980. Several areas of significant radioactive contamination were found, particularly in the sub-floor pits over which the former mill equipment was located. Based upon the results of the preliminary survey, it is apparent that remedial action is warranted.

- e. Did the present owner accept responsibility for the site with knowledge of its contaminated condition and that remedial measures would be needed to make the site acceptable for unrestricted use by the general public?

Response: Unknown. However, if radiological surveys were not conducted at the time the contract was terminated, it is unlikely that Superior Steel or the current owners were aware of the radioactive contamination on the site, particularly the high concentrations of uranium found in the sub-floor pits or under the floor of the storage shed.

AUTHORITY ANALYSIS SUMMARY

Copies of Contract No. AT(30-1)-1412 and related documents have apparently been destroyed. Therefore, the specific terms of the contract and close-out procedures followed at contract termination are unknown.

Sufficient documentation is available to support a general assessment of the relationship between Superior Steel and the AEC with respect to operations conducted under the contract. These conditions are summarized as follows:

- a. The site/operation, including facilities and equipment, was owned and operated by the Superior Steel Corporation.
- b. Circumstances described in reports and general correspondence suggest that controls exercised by AEC representatives over operations at the Superior Steel facility were limited. The following are the principal factors that support this assessment:
 - (1) The type of contract (unit price);
 - (2) Superior Steel was experienced and proficient in the work performed under the contract;
 - (3) An accountable station for SF material, SSF, was established at the Superior Steel facility.
- c. Almost without exception, AEC contracts contained provisions for safety and accident prevention (see attached contract, Article XI) that required the contractor to take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property, and to conform to all health and safety regulations and requirements of the Commission. The AEC did visit/inspect and make recommendations with regard to radioactive contamination in the workplace.

- d. The radioactive contamination that remains on the site was the result of DOE predecessor related operations.
- e. Although unlikely, considering the period of performance, type of contract, known circumstances and terms of the contract with Metals & Controls Corporation, the presence of indemnification provisions in the Superior Steel contract cannot be determined with certainty unless a copy of the contract can be found.

REFERENCES

1. Extract of AEC Contract No. AT(30-1)-1413 with Metals and Controls Corporation, Attleboro, Massachusetts, for research and development.
2. Extract of Proposal for Production of Uranium Strip for the Atomic Energy Commission by Superior Steel, undated.
3. MED letter, MSA 470.1 (general); from Zeitlin to District Engineer, Oak Ridge, Subject: Stainless Steel, Rolling Capacity, March 2, 1945.
4. AEC memorandum from Delagi to files, Subject: Zirconium Samples for Cladding Project, July 1, 1952.
5. AEC memorandum from Gustavson to Musser, Subject: Monthly Report for SF Material - November 1952, with one page extract from report attached, date not legible.
6. AEC memorandum from Belmore to Kelley, Subject: Justification for Entering into Contract No. AT(30-1)-1413 with Metals and Controls Corporation Without Formal Advertising, December 31, 1952.
7. AEC memorandum from Dunlap to files, Subject: Telephone Conversation with Dr. J.C. Woodhouse of DuPont, April 1, 1953.
8. National Lead Company letter from Bussert to Cuthbert, Subject: Rollings At Superior Steel Corporation, July 31, 1953.
9. AEC letter from Kaulbach to Boyer, February 9, 1954.
10. AEC memorandum from Dunlan to files, Subject: Meetings with Superior Steel Corporation on May 12 and May 26, 1954 (Contract AT(30-1)-1412), June 7, 1954.
11. Superior Steel Corporation letter, Reardon to AEC, Subject: Supplemental Proposal for the Production of Uranium Strip, January 5, 1954.
12. AEC letter, Dunlap to Woodhouse, June 10, 1954, concerning Rolled Material on Hand at Superior Steel Corporation.
13. DOE Savannah River Operations office letter from McFeely to Ramsey and Keller, Subject: Formerly Utilized MED/AEC Site Radiological Survey Program (former Superior Steel Company activities), August 28, 1979.
14. DOE letter, Mott to Cahlan, July 13, 1981, concerning Radiological Survey of the Former Superior Steel Facility with Preliminary Site Survey report attached.
15. HASL report, HASL - Superior Steel - 4, Superior Steel Company, Air Dust Monitoring of Hot Strip Rolling of Uranium, HASL Industrial Hygiene Branch, November 15, 1955.

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M.A. 6
This document consists of 27 pages.
No. 8 of 12 copies, Series A

CONTRACT NO. AT(30-1)-1113

CONTRACT

CONTRACTOR AND ADDRESS:

METALS & CONTROLS CORPORATION
Attleboro, Massachusetts

CONTRACT FOR:

RESEARCH AND DEVELOPMENT

ESTIMATED COST:

\$93,000.00 (including fixed fee
of \$5,000.00)

AMOUNT OF INITIAL
COMMISSION OBLIGATION:

\$37,500.00

PAYMENT TO BE MADE BY:

Division of Disbursement, United
States Treasury Department, New
York, New York. Submit invoices to:
United States Atomic Energy Commission,
P. O. Box 30, Ansonia Station,
New York 23, New York

BASIS OF AWARD:

Negotiation

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THIS CONTRACT, entered into this 24th day of December, 1952, by and between THE UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), as represented by the UNITED STATES ATOMIC ENERGY COMMISSION (hereinafter referred to as the "Commission"), and METALS & CONTROLS CORPORATION (hereinafter referred to as the "Contractor"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, with its principal office at Attleboro, Massachusetts;

WITNESSETH THAT:

WHEREAS, the Government desires the Contractor to perform certain research and development work and the Contractor is willing to do so; and

WHEREAS, this contract is authorized by law, including the Atomic Energy Act of 1946;

NOW, THEREFORE, the parties hereto mutually agree as follows:

ARTICLE I - PERIOD OF PERFORMANCE

The period of performance of work under this contract shall commence on July 1, 1952, and shall end on December 31, 1953.

ARTICLE II - SCOPE OF WORK

1. The Contractor shall perform, in good faith, the research work calculated to develop:
 - a. An economical and suitable procedure for fabricating composites of uranium and its alloys with zirconium, aluminum or their alloys.
 - b. A suitable practice for the rolling of flat uranium plate; 0.200" to 0.250" thick by 4" to 6" wide, by 10' long or multiples of this length, and if required by the Commission, jacketed with steel or other suitable sheathing.
 - c. An economical and suitable procedure for the production of a fuel element assembly conforming to the dimensions and description set forth in a secret letter from the Commission to the Contractor dated November 5, 1952. Said secret letter is hereby made a part of this contract with the same force and effect as if more fully set forth herein. Produce and submit samples of such fuel element assembly for examination and test.

d. The Commission shall furnish, without expense to the Contractor, the uranium, zirconium billet and, if requested by the Contractor, the zirconium strip and other materials necessary for the proper performance of the contract work.

2. In addition to the foregoing:

- a. The Commission shall have the right to inspect in such manner and at such times as it deems appropriate all activities of the Contractor arising in the course of the work under this contract; provided, however, that until such time as the Contractor, in accordance with subparagraph b. below, submits its interim technical report on the completion of the scientific phases of the work called for in paragraph 1 a. above, or its final report under this contract, whichever report is submitted first, such right of inspection shall not be deemed to grant to the Commission access to the Contractor's novel secret processes identified by the Contractor as its "N5h Method" and its "PT Method" for purposes other than to fulfill the Commission's security and health and safety obligations under Article XIII, DISCLOSURE OF INFORMATION, and Article XI, SAFETY AND ACCIDENT PREVENTION. It is understood and agreed that if the Commission is granted a license under the Contractor's novel secret processes referred to above in accordance with Article VII, PATENTS, then at the time that the Contractor submits the interim technical or final report referred to above, the Commission shall have the right to examine the Contractor's facilities for the express purpose of obtaining scientific data and know-how with respect to the said secret processes.
- b. The Contractor shall prepare and submit to the Commission the following reports with respect to its work and activities under this contract:
- (i) Monthly progress reports;

- (ii) Interim technical reports on completion of scientific phases of the work;
- (iii) Such special reports as may be requested by the Commission from time to time; and
- (iv) A final report summarizing its activities, findings and conclusions;

it being understood and agreed, however, that the Contractor shall not be required to furnish to the Commission in any of the foregoing reports any technical information, data or know-how with respect to the said secret processes unless the Contractor shall grant to the Commission a license to said secret processes in accordance with Article VI hereof, in which event such information, data, and know-how will be included in the interim technical report on the completion of the work called for in paragraph 1 a. above or in the final report whichever is submitted first.

3. In performing the work called for under this contract, the Contractor shall utilize its best efforts, know-how and ability and shall proceed as and to the extent the Commission may from time to time reasonably request. The Contractor shall place emphasis (or relative emphasis) on various phases of said work as and to the extent reasonably requested by the Commission from time to time, and shall keep the Commission fully advised of its progress hereunder and of the difficulties, if any, which it experiences. The work shall be subject to (i) the general supervision of the Commission, and (ii) the Commission authorizations and approvals hereinafter provided for in this contract.

ARTICLE III - CONSIDERATION

1. Compensation for Contractor's Services. In full and complete compensation for its undertakings and performance under this contract the Contractor shall receive from the Government:

- a. A fixed fee of Five Thousand Dollars (\$5,000.00).
- b. Reimbursement for certain costs and expenses and provided in paragraph 2 hereof.

2. Reimbursement for Contractor's Expenditures. The Contractor shall be reimbursed in the manner hereinafter described for such of its costs incurred in the performance of the work under this contract as may be approved or ratified by the Commission, including, but not limited to, the following items:

- a. The cost of materials, tools, equipment and supplies purchased or withdrawn from the Contractor's stores for use in the performance of the Contractor's work. The cost of items withdrawn from stores for purposes of reimbursement hereunder, shall be at the price at which such items are normally liquidated from the Contractor's stores accounts.
- b. Charges for freight transportation (including reconsignment, switching, demurrage and diversion charges) and crating, loading and unloading and storage charges for materials, tools, equipment and supplies procured in accordance with subparagraph a. above.
- c. Cost of plant rearrangements, alterations and restorations made necessary by the work hereunder, but no such cost shall be incurred without the prior written approval of the Commission.
- d. Payments in accordance with subcontracts entered into pursuant to this contract.
- e. (i) In lieu of direct reimbursement for the cost of all labor, social security and other employment taxes, all costs and expenses incurred in connection with the Contractor's employee welfare plans; all travel and insurance expenses, and all overhead or indirect charges (including elements of cost not otherwise reimbursable hereunder) the Contractor, subject to section (ii) hereof shall receive:
 - (1) For each hour (regardless of the time of day or the day of the week in which the hour falls) that the contract services are performed by the following classes of employees or in the following departments of the Contractor's plant, the following provisional hourly rates:

<u>Classification of Employee; Department</u>	<u>Provisional Hourly Rate</u>
Project Class Engineer.	\$7.40
Intermediate Grade Engineer	\$6.45
Engineering Assistants and Technicians	\$5.65
Sendzimer Rolling Department	\$19.10
Breakdown, Intermediate & Miscellaneous	
Rolling Department	\$7.94
Slitting Department	\$7.94
Annealing Department	\$5.82
Tool Room Department	\$3.24

(2) An amount equal to the provisional rate of 24.06% of the total costs reimbursable under subsection (1) above.

(ii) The provisional rates set forth in subsections (1) and (2) of section (i) above, may be increased or decreased as hereinafter provided. Within fifteen (15) days after June 30, 1953 (or such longer period of time as the Commission may allow), or within fifteen (15) days after the completion or termination in whole of this contract, whichever date occurs first in point of time, the Contractor shall furnish to the Commission the following cost data:

- (1) Statements of experienced costs to the extent that they are available at this time;
- (2) A new estimate and breakdown of the proposed fixed rates;
- (3) An explanation of the differences, if any, between the provisional and fixed rates;
- (4) Such relevant shop and engineering data, cost records, overhead absorption reports and accounting statements as may be of assistance in determining the accuracy and reliability of the new estimate and the proposed fixed rates;
- (5) Such other statements, in such form and detail as the Commission may prescribe, it being understood and agreed that the Contractor will permit such audits and examinations of its financial books, records and accounts as the Commission may request.

Within fifteen (15) days after the receipt of such cost data (or such longer period of time as may be mutually agreed upon), the parties shall negotiate in good faith to agree upon fixed rates for all work theretofore performed and thereafter to be performed under the contract. The agreement reached shall be evidenced by a contract amendment. In the event the Commission and the Contractor fail to agree upon such fixed rates in accordance with this Article, such failure to agree shall be deemed to be a disagreement which shall be disposed of pursuant to Article XXVII, DISPUTES. It is understood and agreed, however, that until the fixed rates become effective in accordance with this paragraph 2 e., or pending disposition of any disagreement with respect to such rates, the Contractor shall continue the work called for hereunder, and shall be paid the provisional rates set forth in subsections (1) and (2) of section (1) above, subject to later revision. Any excess in payments to the Contractor for work performed to the date the fixed rates become effective, because such rates are lower than the provisional rates that were in effect shall be applied by the Contractor in reduction of the cost of the work under this contract, or if the Commission so directs, be refunded promptly to the Government. Any deficits in payments to the Contractor for work performed during such period because the fixed rates are higher than the provisional rates that were in effect shall be paid promptly by the Government to the Contractor.

ARTICLE IV - LIMIT OF GOVERNMENT LIABILITY

1. Estimated Cost. The estimated cost of the work under this contract, including the fixed fee set forth in paragraph 1 a. of Article III and the provisional rates provided for in paragraph 2 e. of Article III, is Ninety-Three Thousand Dollars (\$93,000.00). It is understood that neither the Government nor the Contractor guarantees the correctness of this estimate or any revision thereof, and that there shall be no adjustment in the amount of the Contractor's fixed fee by reason of any errors in the computation of estimated costs or revised estimated costs, or any difference between any estimated cost or revisions thereof and the actual cost of the work.

2. Commission Obligations. The Commission has initially obligated for this contract, from obligational authority available to it, the sum of Thirty-Seven Thousand Five Hundred Dollars (\$37,500.00). Said amount may be increased by the Commission, in its discretion, from time to time. The Contractor shall promptly notify the Commission in writing whenever it believes that the then Commission obligation for this contract is insufficient, and its notice shall contain its estimate of the amount of such insufficiency. When and if the total of amounts paid and payable to the Contractor under this contract (including the fixed fee and the actual or estimated amounts unpaid by the Contractor on all subcontracts and all other commitments on the assumption that they will be completed), shall equal the then Commission obligation for this contract, the Contractor shall not be expected to incur further expenses nor to perform further hereunder unless the Commission agrees in writing to increase said obligation for this contract in an amount sufficient to cover additional work hereunder. Notwithstanding any other provisions of this contract, the liability of the Government under this contract shall be limited to the Commission obligation specified in this paragraph, as same may be increased by the Commission from time to time by notice to the Contractor in writing.

ARTICLE V - PAYMENTS

1. Payment of the Fixed Fee. Payment of ninety percent (90%) of the fixed fee set forth in paragraph 1 a. of Article III shall be made by the Government monthly in amounts based on the percentage of the completion of the work hereunder, as determined from estimates submitted to and approved by the Commission.

2. Reimbursement of Cost. Reimbursement under this contract will be made by the Government upon receipt by the Commission of properly certified invoices or vouchers or such other evidence as the Commission may require. Generally, reimbursement will be made monthly, but may be made at more frequent intervals if conditions so warrant.

3. Final Payment. Upon (i) the expiration of the period of performance of the work under this contract and its final acceptance by the Government, and (ii) the furnishing by the Contractor of a release in such form and with such exception that may be approved by the Commission of all claims against the Government under or arising out of this contract, accompanied by any accounting of Government-owned property required by Article XXI, GOVERNMENT PROPERTY, the Government shall promptly pay to the Contractor the unpaid balance of the fixed fee withheld pursuant to paragraph 1 above, less deductions due under the terms of this contract and any sum required to settle any unsettled claim which the Government may have against the Contractor.

of the work set forth in Article I, SCOPE OF WORK, or at the time of the expiration of this contract, shall become the property of the Government at such time and shall thereafter be delivered to the Government or otherwise disposed of by the Contractor as the Commission shall determine and provided further that neither this Article nor any other provision of this contract shall be deemed to require the Contractor at its unallowable cost to store or preserve records which bear a security classification.

ARTICLE IX - TERMINATION OR COMPLETION OF WORK

1. For any reason other than the Contractor's breach or breaches, if any, with respect to this contract, the Government may, at its election and under this Article, by written notice from the Commission to the Contractor (i) from time to time terminate in part performance of work under this contract, or (ii) at any time terminate in whole performance of work under this contract.

2. This Article shall not be deemed to apply or to affect the rights or remedies, if any, of either party hereto in the event of the other party's breach with respect to this contract. Termination under this Article shall be deemed to be for the convenience of the Government and shall be without prejudice to any claims which either party may have against the other party.

3. The Contractor shall take action in accordance with this paragraph after a notice of termination has been given pursuant to this Article. The Contractor shall, except as otherwise directed by the Commission (i) discontinue the terminated work at the time specified in the notice of termination; (ii) place no further orders or subcontracts for services, supplies, materials, equipment, articles or facilities for performance of terminated work; (iii) proceed to the best of its ability to terminate all orders and subcontracts to the extent that they relate to the terminated work; (iv) assign to the Government, in the manner and to the extent directed by the Commission all the right, title and interest of the Contractor under the terminated portion of the orders and subcontracts so terminated; (v) settle, with the approval or ratification of the Commission, all subcontracts, obligations, commitments, liabilities and claims related to the terminated work, the cost of which would be reimbursable in accordance with the provisions of this contract; (vi) continue performance of such part of the contract work, if any, as shall not have been terminated; and (vii) take such other action with respect to the terminated work as may be required under other Articles of this contract, and subject to the approval or ratification of the Commission, as may be otherwise appropriate, including, but not limited to, action for the protection and preservation of Government-owned property.

4. In the event of completion of the work under this contract without prior termination thereof in whole pursuant to this Article, the Contractor shall promptly take such pertinent action with respect to the contract as may be required under other Articles of this contract and, subject to the approval or ratification of the Commission, as may be otherwise appropriate, including, but not limited to, action for the protection and preservation of Government-owned property.

5. In the event of any and every termination pursuant to this Article, the Contractor's costs and expenses arising out of performance in the close-out of the terminated work, reimbursable in accordance with Article II hereof, shall be deemed to include, in each instance, those items incidental to the termination, such as, but not limited to, legal, accounting and clerical costs or expenses, which are approved or ratified by the Commission.

6. With respect to and upon termination in whole pursuant to this Article of work performance under this contract, the Contractor shall receive from the Government such portions of the fixed fee covering the work so terminated as the work actually performed under the contract bears to the total work called for thereunder, less payments previously made on account of such fee. If this contract is terminated for the default of the Contractor, no further payment of the fixed fee shall be made.

7. In the event of any and every partial termination pursuant to this Article, the Contractor and the Commission shall promptly negotiate in good faith to agree upon an equitable adjustment of the pertinent fixed fee hereunder because of such termination. After each negotiation the agreement reached, if any, shall be incorporated in a supplemental agreement to this contract; provided, however, that after the start of negotiations and in the absence of the execution and delivery of a supplemental agreement covering the matter for negotiation, either the Commission or the Contractor may give notice to the other that it considers a reasonable time for agreement has elapsed, in which event, upon expiration of ten (10) days after the giving of said notice and in the continued absence of the execution and delivery of a supplemental agreement covering the matter for negotiation, a dispute shall be deemed to exist as to such matter and shall be determined in accordance with Article XXVII hereof.

8. The obligation of the Government to make any of the payments or reimbursements provided for under this Article or under any other Articles of this contract shall, in event of (i) each termination in whole pursuant to this Article, or (ii) completion of the work under this contract without prior termination thereof in whole pursuant to this Article, be subject to any unsettled claims in connection with this contract which the Government may have against the Contractor.

9. Any other provisions of this contract to the contrary notwithstanding, the Contractor and the Commission may agree upon the whole or any part of the amount or amounts which the Contractor is to receive upon and in connection with (i) each termination pursuant to this Article, or (ii) completion of the work under this contract without prior termination thereof in whole pursuant to this Article. Any agreement so reached shall be evidenced by a supplemental agreement to this contract which shall be final and binding upon the parties with regard to their respective claims against each other concerning this contract except as therein otherwise expressly provided.

10. Prior to final payment under this contract and as a condition thereof, the Contractor shall furnish the Government with a release of all claims against the Government arising under and by virtue of this contract, other than (i) such claims, if any, as may be specifically excepted by the Contractor from the operation of the release in stated amounts to be set forth therein, or in estimated amounts where the amounts are not reasonably susceptible of exact statement, and (ii) any claim based upon the responsibility of the Contractor to third parties arising out of the performance of this contract not known to the Contractor at the time of furnishing the release. The Contractor shall promptly notify the Commission of any claims of the type described in clause (ii) of this paragraph which are asserted subsequent to the execution of the release.

ARTICLE X - SPECIAL REQUIREMENTS

1. Except as otherwise directed by the Commission in writing, the Contractor, in performing the work called for in this contract, agrees to do the following:

- a. Bonds and Insurance. Except as otherwise specially provided, the Contractor shall exert all reasonable efforts to procure and maintain such bonds and insurance policies as are required by law, or required by the Commission. Except as otherwise directed by the Commission, in every instance where the premium on a bond or insurance policy is a reimbursable cost under the contract, the bond or insurance policy shall contain endorsements or other recitals (i) excluding, by appropriate language, any claim on the part of the insurer or obligor to be subrogated, on payment of a loss or otherwise, to any claim against the United States, and (ii) providing for at least thirty (30) days prior written notice by registered mail to the United States Atomic Energy Commission of bond or policy cancellation, as the case may be. It is understood and agreed that in the event the Contractor

fails to procure and maintain insurance of the types and in the amounts required by this contract, or should any such insurance be cancelled or altered in any way whatsoever, the Commission shall have the right to require the Contractor to suspend operations under this contract. At any time thereafter, within the term of the contract, the Commission shall have the right to require the Contractor to assume any such operations so suspended.

b. Permits. Procure all necessary permits and licenses; abide by all applicable laws, regulations and ordinances having the effect of law or expressly provided for in this contract, of the United States of America, the state, territory, or political subdivision in which the work is done, and of any other duly constituted public authority.

c. Claims and Litigation. (i) The Contractor shall give the Commission immediate notice of any claim against the Contractor or suit or action filed or commenced against the Contractor arising out of or connected with the performance of this contract, irrespective of whether or not the cost or expense of such claim, suit or action, is to be borne wholly or in part by the Government hereunder and irrespective of whether the Contractor is insured against any risks which may be involved. The Contractor shall furnish immediately to the Commission copies of all pertinent papers received by the Contractor.

(ii) Insofar as the following shall not conflict with any policy or contract of insurance, and to the extent requested by the Commission, the Contractor, with respect to any claim, suit or action, the cost and expense of which would be reimbursable in accordance with Article II hereof, shall promptly do any and all things

to effect an assignment and subrogation in favor of the Government of all the Contractor's rights and claims, except as against the Government, arising from or growing out of any such claim, suit or action, and shall promptly authorize representatives of the Government to settle, defend, or otherwise handle any such claim, suit or action and to represent the Contractor in, and take charge of, any litigation resulting therefrom, or shall diligently handle any such claim, suit or action or defend or initiate any litigation in connection with any such claim, suit or action and in so doing, shall consult with the Commission as to the steps to be taken and shall otherwise endeavor in good faith to subserve the interests of the Government.

(iii) Subject to the provisions of subparagraph (ii) above, the Contractor shall diligently handle any claim whatsoever arising out of the performance of this contract and shall promptly defend or initiate any litigation in connection with any such claim, consulting with the Commission as to the steps to be taken.

(iv) With respect to any claim, matter or litigation arising out of the performance of this contract, the handling of which is undertaken by an insurance carrier or by a representative or representatives of the Government, the Contractor shall furnish all reasonable assistance and cooperation that may be requested by the Commission.

(v) "Litigation", for the purposes of this subparagraph d., is defined to include proceedings before administrative agencies.

ARTICLE XI - SAFETY AND ACCIDENT PREVENTION

The Contractor shall initiate and take all reasonable steps and precautions to protect health and minimize danger from all hazards to life and property, and subject to paragraph 2 of Article III hereof pertaining to inspections and reports, shall make all reports and permit all inspections as required by the Commission, and shall conform to all health and safety regulations and requirements of the Commission.

9. In the event the Contractor is indemnified, reimbursed or compensated for any loss or destruction of or damage to Government property, other than as provided in Article II hereof, it shall equitably reimburse the Government. The Contractor shall do nothing to prejudice the Government's right to recover against third parties for any such loss, destruction or damage and, upon the request of the Commission, shall furnish to the Government all reasonable assistance and cooperation (including prosecution of suit and the execution of instruments of assignment in favor of the Government) in obtaining recovery.

ARTICLE XXII - SOURCE AND FISSIONABLE MATERIALS

The Contractor agrees to conform to all regulations and requirements of the Commission with respect to accounting for source and fissionable materials (defined in the Atomic Energy Act of 1946).

ARTICLE XXIII - LETTER CONTRACT

This contract merges and supersedes the letter contract, as amended, between the Contractor and the Commission, No. AT(30-1)-1113, dated June 27, 1952. Insofar as any provisions of this contract differ from any provisions of said Letter Contract, and the modifications to same, the provisions herein contained shall govern.

ARTICLE XXIV - RENEGOTIATION

1. This contract shall be deemed to contain all the provisions required by Section 104 of the Renegotiation Act of 1951 (Public Law 9, 82nd Congress).

2. The Contractor agrees to insert the provisions of this Article, including this paragraph 2, in all subcontracts specified in Section 103(g) of the Renegotiation Act of 1951; provided, that the Contractor shall not be required to insert the provisions of this Article in any subcontract excepted by or pursuant to Section 106 of the Renegotiation Act of 1951.

ARTICLE XXV - COMPLIANCE WITH LAWS

Except as otherwise directed by the Commission and subject to the provisions of Article XIX, STATE AND LOCAL TAXES, the Contractor shall procure all necessary permits and licenses; obey and abide by all applicable laws, regulations, ordinances, and other rules of the United States of America, of the State, territory, or political subdivision thereof, wherever the work is done, or of any other duly constituted public authority.