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October 31, 1952

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W. B. Kelley, Manager

F. M. Reinsore, Director, Production Division

JUSTIFICATION FOR ENTERING INTO CONTRACT NO. AT(50-1)-1413 WITH
METALS & CONTROLS CORPORATION WITHOUT FORMAL ADVERTISING
REF: GM-S&S-39

SYMBOL: FM:RUD:smh

Attention: V. S. Duncombe, Assistant General Counsel

In accordance with Bulletin No. GM-S&S-39 the following information is offered as justification for entering into Contract No. AT(50-1)-1413 with Metals & Controls Corporation, without the use of formal advertising. The numbering system used in the following narrative justification corresponds to that which is used in Bulletin GM-S&S-39.

1. Metals & Controls Corporation
General Plate Division
1 Forest Street
Attleboro, Massachusetts
2. Same as above.
3. AT(50-1)-1413
4. Not applicable.
5. Conversion from letter contract to definitive contract (cost-plus-fixed-fee type).
6. During the past year there has been a rapidly increasing interest and demand for flat, plate-type reactor fuel elements. This type of element possesses a far greater surface-to-volume ratio than the conventional cylindrical slug; thus making possible more efficient use of uranium in reactors.

Due to the pronounced advantages of plate elements, several groups began studies to determine various methods for their fabrication. All of the processes developed to date have been expensive, time-consuming unit operations, unsuited to production applications.

~~Confidential~~

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It was decided that a production procedure for the fabrication of these elements in experimental quantities was needed as soon as possible, since their development for several reactors had been planned. Reference is made to a memorandum from C. A. Nelson to R. N. Cook, May 5, 1952, (Ref. T:JSG/LAN).

A letter contract, No. AT(50-1)-1413, was entered into with Metals & Controls Corporation on June 27, 1952 for the development of a production process for the fabrication of zirconium or aluminum-clad flat uranium fuel elements. The scope of work was as follows:

"... to perform research work ... calculated to develop an economic and suitable procedure for fabricating composites of uranium and its alloys with zirconium, aluminum, or their alloys."

Since the original letter contract was initiated, emphasis has been placed primarily on the development of a procedure for fabricating bare, flat uranium plate rather than on clad element development. As a secondary effort, however, a few samples of aluminum-clad and zirconium-tin alloy clad plate will be attempted to explore the applicability of certain cladding techniques now employed by the contractor for commercial products.

The dimensional specifications received at WVO have varied markedly during the several months since June 27. Reference is made to the following memoranda which are made part of this document:

- C. A. Nelson to R. N. Cook, May 5, 1952.
- H. E. Lalley to P. M. Belmore, September 19, 1952
- P. M. Belmore to J. Ottmar, November 5, 1952.

The scope of the work is now as follows:

1. To develop an economic and suitable practice for the rolling of flat uranium plate, 0.290" to 0.250" thick by 1" to 6" wide by 10 feet long or multiples thereof, jacketed and/or unjacketed.
2. Perform ... research work calculated to develop an economical and suitable procedure for fabricating composites of uranium and its alloys with zirconium, aluminum, and their alloys."
3. Perform research work calculated to develop an economic 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, and to produce and submit samples of such fuel assembly for test and examination as required.

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7. Rolling and cladding strip and plate is an art, commercial success in which requires extensive experience and "know-how". Only a handful of organizations in the United States possess such a technical background and experience, Metals & Controls Corporation being notable among them. In addition to this, Metals & Controls Corporation has extensive facilities, ideally suited to this work. Few modifications of existing mill equipment are required.

Commercial products by Metals & Controls Corporation include clad steel, thermostatic bimetals, copper-clad aluminum, clad rare metals (i.e. gold, silver and platinum), etc. For work of this type, in a field limited to a few concerns, it is not practicable to utilize formal advertising. The organizations with particular experience and background must be carefully selected. In addition, the work is strictly of an exploratory and developmental nature.

- 8a. Solicitation in keeping with full and free competition was not considered advantageous from the standpoint of time and cost in view of the nature of the services explained in Item 7 above.

The method of solicitation was as follows: A group of firms was selected by virtue of their background and previous experience in cladding and rolling work. Meetings were held on June 12 and 15, 1952 with both representatives of the firms in question and the ABC present. At these meetings the proposed work (as of June 1952) was discussed and proposals requested.

References attached:

1. Letter from F.M. Belmore to Selected organizations inviting them to attend discussion: Symbol MA:GED:jb, June 9, 1952.
2. Minutes of Meetings, June 12 and 15, 1952.
3. Replies and proposals.

- 8b. Seven firms were invited to submit proposals, of which three responded favorably. (Replies of 7 firms attached.)

8c. Not applicable.

- 9 a. The principal points involved in the negotiation were:

1. The use of background patents and company-confidential processes.
2. The contractor's fee.
3. The hourly rates for personnel and machines.

These points were negotiated as follows:

1. Background Patents: Reference is made to the following letters:

Letter from V.C. Duncombe to J. Ottmar, Sept. 19, 1952.

Letter from V.C. Duncombe to J. Ottmar, Nov. 4, 1952.

Letter from T. M. Gunn to M. Medvin, August 14, 1952.

Letter from T. M. Gunn to V. C. Duncombe, October 14, 1952.

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2. The fixed fee will be \$5,000 for the 18 month term of the contract.
3. Hourly rates: Rates proposed by the contractor are accepted on provisional basis, pending detailed audit in June 1953.
References: Memorandum from V. J. Del Vecchia to F. M. Belmore, November 18, 1952.
Letter to F. M. Belmore from J. Ottmar, Oct. 1, 1952.

Reference is also made to the following attachments:

- Memo to Files, thru F.M. Belmore from R. G. Delagi, Dec. 1, 1952.
- Memo to Files, thru F.M. Belmore from G.S. Dunlap, Sept. 5, 1952.
- Memo to Files, thru F.M. Belmore from R. G. Delagi, Nov. 4, 1952.

- 9 b. There have been no previous procurements of this nature.
- 9 c. There are no prime or subcontracts involving construction or related engineering services.
- 9 d. This is not a contract for the operation or maintenance of AEC facilities.
- 9 e. Information is contained in the memoranda referenced under Section 9 a. above, namely:

- Memo to Files, thru F. M. Belmore from G.S. Dunlap, Sept. 5, 1952.
- Memo to Files, thru F.M. Belmore from R. G. Delagi, Nov. 4, 1952.
- Memo to F. M. Belmore from V. J. Del Vecchia, Nov. 18, 1952.
- Memo to Files, thru F. M. Belmore from R. G. Delagi, Dec. 1, 1952.

These give as accurate a cost picture as possible due to the strictly developmental nature of the work.

The fixed fee of \$5,000 for the 18 month term of the contract is based on the \$3,000 estimated cost of the work, and is well below the 6% fee allowed on other development contracts.

Materials to be furnished by the Commission include natural uranium and zirconium and/or zirconium alloys.

- 9 f. There will be no subcontractors whose subcontracts will exceed \$100,000.
- 9 g. The contractor requested hourly rates in lieu of direct reimbursement of salaries and wages. Since the proposed rates include overhead, the Commission refused to agree unless a review of the rates by means of a detailed audit be made at a later date. It was agreed to redetermine the hourly rates as of June 30, 1953. Reference is made to the attached memorandum from V. J. Del Vecchia to F.M. Belmore, November 18, 1952.
- 9 h. It is not now contemplated that any Government property other than uranium and allied materials will be furnished to the contractor.
- 9 i. The financial condition of the contractor is deemed satisfactory.

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9 j. The contractor is well known in the field of clad-metal fabrication and currently holds a prime contract with the Schenectady Operations Office of \$125,000, uncompleted value to June 30, 1953. The contract is of a production nature; currently, setting up is complete and initial production runs have begun. Research and development work of the nature involved in the HYCO contract should have no effect upon the progress of the Schenectady work.

9 k. The amount of funds available and encumbered for the contract is \$77,500.

Appropriation No. 6910301-91
Allowance No. 22-31-91
Budgetary Class: 2095
Budget Item: 2101

9 l. This is a research and development contract. The furnishing of the required material not later than the termination date of the contract is satisfactory.

9 m. Not applicable.

9 n. Mr. G. L. Dunlap
U.S. Atomic Energy Commission
P. O. Box 90, Madison Station
New York 23, New York

Phone: Plaza 7-3600, Ext. 263.

Enclosures:

1. Memo G.A. Nelson to H.W. Cook, May 5, 1952
2. " G. E. Kelley to F.M. Belmore, Sept. 19, 1952
3. Ltr F. M. Belmore to J. Ottmar, Nov. 5, 1952.
4. Ltr from F.M. Belmore to selected organizations, June 9, 1952
5. Minutes of Meetings June 12 and 16, 1952.
6. Replies and Proposals (Bridgeport Brass Co. 6/26/52, American Steel & Wire Co. 6/13/52, Lukens Steel Co. 6/17/52, Athenia Steel Co. 6/11/52, Baker & Co. 6/18/52, Superior Steel Corp. 6/9/52, Metals & Controls Corp. 6/20/52).
7. Ltr from V.C. Duncombe to J. Ottmar, Sept. 19, 1952.
8. Ltr from V.C. Duncombe to J. Ottmar, Nov. 4, 1952.
9. Ltr from T. M. Gunn to M. Hedvin, Aug. 14, 1952.
10. Ltr from T. M. Gunn to V.C. Duncombe, Oct. 14, 1952.
11. Memo from V. J. Del Vecchia to F. M. Belmore, Nov. 18, 1952.
12. Ltr from J. Ottmar to F.M. Belmore, Oct. 21, 1952.
13. Memo to Files from R.S. Delargi, Dec. 1, 1952.
14. Memo to Files from G.S. Dunlap, Sept. 5, 1952.
15. Memo to Files from A.S. Delagi, Nov. 4, 1952.

J. C. Clarke
F. Caresia
I. Carberry