

Superfund Records Center
SITE: Shpack
BREAK: 11.9
OTHER: 209716

TAB 60

SDMS DocID 000209716



Exhibit K

MAJOR RESEARCH & DEVELOPMENT PROJECTS

The list of principle Research & Development projects worked on by Metals & Controls Inc. in 1960 is furnished herewith as requested. As noted in our 1959 submittal, security limitations imposed by the Atomic Energy Commission upon the nuclear industry, limit research in this field also exclusively to Government programs. As may be seen from the list of projects, this situation is especially true in Metals & Controls Inc. where renegotiable business accounts for 96% of our 1960 Net Sales Billed.

(a) INDUCTION HEATING OF BILLETS - COST \$50,400

This process was developed for and is specifically applicable to Navy nuclear core work.

(b) SUBASSEMBLY PRESS BONDING - COST \$18,900

This project was designed to investigate a promising method for eliminating subassembly welding on Navy nuclear cores.

(c) THORIATED GRAPHITE DEVELOPMENT - COST \$10,200

Technology gained as a result of this project was applicable to parallel materials employed in the defense effort.

(d) PYROCARBON COATING - COST \$7,600

This was an experimental program of basic research investigating a novel method of applying pyrolytic carbon to ceramic fuel surfaces. The project is specifically applicable to Navy core work.

(e) DEVELOP BORON CARBIDE WAFER MANUFACTURING CAPABILITY - COST \$6,500

This project was designed to establish a capability for fabrication of materials for a carbide defense project.

(f) GENERAL CERAMIC RESEARCH - COST \$8,200

A continuing effort in cermet control materials; i.e., rare earths, specifically oriented to the defense effort.

(g) WELDING PROJECT USING CONSUMABLE WIRE - COST \$3,400

This process is specifically applicable to Navy nuclear cores.

(h) AUTOMATE SUBASSEMBLY WELDING - COST \$2,400

This project was specifically applicable to Navy nuclear cores.

Numerous other projects comprise the remainder of our 1960 research effort and after deletion of those projects of a classified nature, the description of some of these projects are noted below.

(a) **STAINLESS STEEL POWDER EVALUATION**

This project was for Aircraft Nuclear Propulsion.

(b) **ZIRC II WELDING PROJECT**

This project was specifically applicable to Navy nuclear cores.

(c) **WELDING WITH NON-THORIATED TUNGSTEN ELECTRODES**

This project was part of the Smidgen Control Program for the Navy.

(d) **AMMONIUM BIFLUORIDE ETCHING OF ZIRCONIUM**

This project was applicable to the dimensional pickling process for Navy cores.

(e) **HOT PRESS BONDING PROJECT**

This project was for the development of a process to fabricate poison sticks for Nuclear reactors in the Navy's Destroyer program.

(f) **MODIFICATION OF PROPORTIONAL COUNTER**

This project modified the 7-foot proportional counter previously developed for smidgen control on Naval nuclear plates. This counter was a very important contribution to the defense effort and is now used by all Navy Nuclear Core Vendors.

(g) **HOMOGENEITY STUDY OF ELEMENTS**

This project was to study homogeneity of enriched fuel elements by autoradiography and is applicable to all nuclear fuels used for Naval cores.

(h) **ULTRASONIC TESTING OF ZIRC FORGINGS**

This test is now a standard test of Zirc forging billets required by the Navy.

(i) **WELD PENETRATION MEASUREMENT**

This project evaluated a prototype magnetic probe for measuring weld penetration in Navy nuclear cores.

TAB 61

A document prepared in connection with the merger in December of 1957 listed the following contracts.

PRIME CONTRACTS

Contract No.	Date	Contract Type	AEC Office
AT(30-3)-216	3/13/56	Cost-plus-fixed-fee	SOO
AT(30-3)-144	1/22/54	Cost-plus-fixed-fee	SOO
SCH-58-22	7/24/57	Lump Sum	SOO
SCH-58-41	8/23/57	Lump Sum	SOO
AT(11-1)-548	6/28/57	Lump Sum	POO

SUBCONTRACTS

Contract No.	Date	Prime	Prime Contract No.	Contract Type	AEC Office
NPD-39431-K	11/12/57	GE-KAPL	W-31-109-Eng52	Lump Sum	SOO
C-205	5/15/57	Phillips	AT(10-1)-205	Lump Sum	IOO
N-142857	10/2/57	Aerojet	AT(10-1)-880	Lump Sum	IOO
73-X-13044-M	8/15/57	Westing-house	AT(11-1)-Gen-14	Lump Sum	PAO
73-X-135328-M	8/15/57	Westing-house	AT(11-1)-Gen-14	Lump Sum	PAO
73-X-5144-M	9/25/56	Westing-house	AT(11-1)-Gen-14	No/Chg.	PAO
A-9167	11/20/57	Battelle	AT(11-1)-171	Lump Sum	LAO
ANPG-240043	10/14/57	GE-ANP	AT(11-1)-171	Lump Sum	LAO
73Y-87959	12/9/57	Carbide	W-7405-Eng-26	Lump Sum	OROO

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A July 12, 1979 memorandum from the Schenectady Naval Reactors Office to the DOE Office of General Counsel identified the following additional contracts Metals and Controls had with the AEC.

Date	Contract or Purchase Order	Scope of Work	AEC Office
6/57	SCH-57-357	PMA Fuel Plates for the D1G-3 Program	SNR
6/58	SCH-58-354	ATR Fuel Elements	SNR
8/58	SCH-59-27	ATR Fuel Elements	SNR
10/58	SCH-59-90	Stainless Steel Tube Assembly	SNR
2/59	SCH-59-208	Zirconium Clad Foil	SNR
3/59	SCH-59-232	Tube Retainer	SNR
5/59	SCH-59-270	S3G Core	SNR
5/59	SCH-59-275	Ingots	SNR
6/59	SCH-59-332	Alpha Counting Service	
7/59	SCH-60-16	Poison Elements	SNR
11/59	SCH-60-138	ATR Elements	SNR
11/59	SCH-60-165	Zirconium Sticks	SNR
1/60	SCH-60-200	Poison Elements	SNR
3/60	SCH-60-263	Control Rods	SNR
5/60	SCH-60-333	Ingots	SNR
12/60	SCH-61-134	35 Gm. U-235	SNR
1/61	SCH-61-153	Uranium Foil	SNR
3/62	SCH-62-273	Foil	SNR
7/62	SCH-63-8	Cluster Assembly	SNR
11/62	SCH-63-139	Fuel Elements	SNR
1962	AT(30-3)-111	Research	SNR
1962	AT(30-3)-112	Research	SNR
1962	AT(30-3)-248	Fuel Element fabrication for S2G Reactor	SNR
1962	AT(30-3)-510	D1G Fuel Elements	SNR

1962	AT(30-3)-523	Fuel	SNR
2/63	AT(30-3)-529	S3G Cores	SNR
8/63	AT(30-3)-535	Proof Test	SNR
1963	AT(30-3)-514	D1G Fuel Elements	SNR
	M 84183		COO
	HE 3476		COO
	N-141TS-8113H		COO
	31-TS-399004		COO
	D-9035		COO
	31-109-38-1651		COO
	C 244		IOO
	C 205	Subcontract with Phillips for SPERT III Reactor *	IOO
	AEC-42454		LAO
	AEC-16904		LAO
	AEC-25354		LAO
	ANPG 310965		LAO
	AEC-78167		LAO
	192-NMPO-242084		LAO
	AT(30-1)-2303		NYOO
	S 360		NYOO
	2152-0016		NYOO
	E-7-77650		NYOO
	9E-0659		NYOO
	9E-0890		NYOO
	8469207		SFOO
	91X70500C		OROO
	AT(36-1)-70		PNR
	AT(36-1)-71		PNR
	AT(36-1)-81		PNR
	AT(36-1)-98		PNR
	AT(36-1)-104		PNR
	AT(36-1)-106		PNR
	AT(36-1)-118		PNR
	AT(36-1)-127		PNR
	73Y297800		PNR
	73Y316962		PNR
	NPD-5642		KAPL
	NPD-5653		KAPL
	NPD-6507		KAPL

	NPD-6530		KAPL
	NPD-6789		KAPL
	NPD-6820		KAPL
	NPD-7378		KAPL
	NPD-9117		KAPL

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A handwritten list in Texas Instrument' archives listed active contracts and/or purchase orders in May 1960. Those not identified in other documents are listed below.

Contract No.		Description
AT(36-1)-53	WAPD 52	AIW cores 2A and 2E
AT(11-1)-548	WAPD 30	S5W core 2D
NHA-11224	OM-18	Weld subassembly, assembly & deliver 4 unit cells
G-36095	_P-83	To cover chg. for experimental extrusion work
WA-491312-NSP	DC-7	R&D for fuel ele. for CRBR reactor
Contract	NISSHO-4	30 pool type fuel assembly
NHA-13117	OM-34	Provide labor for miscellaneous work assembly ____ scope of work under current OM work orders
2711-FC	NMEC-1	Argonaut type plate
CCTC-6093-59	ACCS-1	1 piece highly enriched uranium foil
59979	BNL-28	ETR fuel assemblies
NPD-44723-D	KAPL121	Power unit test cell assembly
CA-02974	LOC-9	1 fission plate
CA-02974	LDC-2A	20 STD. 4 Control and 4 Part MTR type fuel elements
G-65721	G_125A	X-ray of mounted samples
67272	G169	Vapor blasting of metal bases
1265	GNE-9	Manufacture in-pile loop insulator assemblies
13585	HSM4A	Weld top transitions
13586	HSM4B	Weld header rings
13587	HSM4C	Weld rings
NPD-447704	KAPL136	C.W.A. type III plates
DC-10400-2746	AC20	18 dummy fuel elements
DC-11300-2720	AC23	10-plate and 6-plate fuel elements

31-109-38-1162	ANL-37	Preproduction charges for depleted uranium back order
N031-TX-301597	NAA64B	EU disk foils
NHA-18039	OM37	Discrete poison elements
NHA-18262	OM33	Reactor cells complete
Verbal - 1/15/60	OM39	Three autoclaves
		Uranium mobium? alloy sheet depleted uranium sheet
73X-2_5711-M	WAPD__	Hot press bonding & examination of PWR type fuel element
NPD-44770	1_5-KAPL136B5	Poison strips
73240	GP77D	#52 alloy copper cargo billets to be extruded
No 41TS-301705	NAA86	Roll Ni-Al plates *
G-75084	GBR5	Cu cored 440 billets
73x-265_1111	WAPD98	Fab. U/Al alloy fuel strips
5268907	SAN79	EU foil
CA-06934	LOC14A	Standard and control fuel assemblies
Contract		Standard control and partial fuel elements
G-77632	GP138	Cu cored Kovar billets
00253	GP139	Miscellaneous work for Spencer
NPD-45707C	KAPL148	Analysis for total uranium
89-47708-1_1	w-1	Analyze Zircaloy chips
N031-TS-315901	NAA-88	EU washers
AEC-28127	P&W10A	EU foils
72423A	GP140	Coextruded platinum lined inconel tubes
89-47724M	W-2	analyze hafnium chips
50870-S	GP142	Vapor blasting base assembly
CGB-5348	NISSH0-_	NU matched ingot
NO4-TX-304857	NPA89	Inner buffer elements; driver elements, thorium blanket elements
HE-1908	MAL-18	Melt, Roll & Chop EU metal broker biscuits
C-3681	NHBB-1	Perform hydrogen determinations on customer supplied samples
04309	GP145	Cost of NDT of composition cores for solder filled wire
6498507	SAN79A	DU foil
6325907	SAN86	DU foil
6325807	SAN87	EU foil
04720	GP-147	Miscellaneous work on non-destructive testing of platinum-tantalum copper cored wire

04525	GP-144	Weld tantalum tubing, caps and plugs
F-2022	BA13	EU chop stock
AED86210	PA25	EU foil
93x-365	OR32	Packing and handling charges on shipment of three U/2R/B plates

A 1958 renegotiation memorandum listed the following contracts.

Contract Number		Description
13044-M	WAPD 40	Fixed Price Subcontract
73X-177-25-M	WAPD 53	Fixed Price Subcontract
NHA 59117	OM-2	Fixed Price Subcontract
NHA 59118	OM-2	Fixed Price Subcontract
73X-171-02-M	WAPD 49	Fixed Price Subcontract
73X-176-30-M	WAPD 51	Fixed Price Subcontract
57-FO-61700	WAPD 1 (?)	Fixed Price Subcontract

TAB 62

U. S. ATOMIC ENERGY COMMISSION
AEC MANUAL

Revision: CHAPTER 9111 CONTRACT FORMS AND PROVISIONS

1. Attached are revised pages of Chapter 9111 which supersede corresponding pages as scheduled below:

Revised Pages	Superseded Pages	Dated
Table of Contents — Continued (2 Sheets)	Table of Contents — Continued (2 Sheets)	Jan. 12, 1955
9111-01 thru 9111-04	9111-01 thru 9111-0320	Jan. 12, 1955
9111-047 thru 9111-0412	9111-047 and 9111-0410	Jan. 12, 1955
9111-0413-A thru 9111-0413-C	9111-0413-A thru 9111-0414	Jan. 12, 1955
9111-0414 thru 9111-0417	9111-0415 and 9111-0417	June 4, 1958
9111-0419 thru 9111-0428	9111-0418 thru 9111-0428	Jan. 12, 1955
9111-0434 and 9111-0438	9111-0434 thru 9111-0437	Jan 12, 1955
9111-0442 thru 9111-054	9111-0442 thru 9111-054	Mar. 28, 1958
9111-06 thru 9111-07	9111-06 thru 9111-07	Jan. 12, 1955
9111-097-B	9111-097-B	Jan. 12, 1955
Appendix 9111-072	Appendix 9111-072	Jan. 12, 1955
Appendix 9111-097	- - - -	- - - -
DD Form 7847		

2. The principal changes made bring the following articles into agreement (except for changes of words like "Secretary" to "Commission") with corresponding articles set forth in Standard Form 32, October 1957, edition, as follows:

9111-033 - Covenant Against Contingent Fees.
 9111-034 - Disputes (Also see Note thereto per Staff Paper 83/11).
 9111-037 - Assignment of Claims.
 9111-047 - Changes (Fixed-Price Supply Contracts).
 9111-0413 - Default (Fixed-Price - Supply).
 9111-0418 - Inspection (Fixed-Price - Supply).

3. Changes were also made in the following articles:

9111-0311 - Examination of Records. The language of this article has been revised and clarified and exempts procurements up to \$2500 instead of \$1,000. Also, under Note A, Contracts Exempt from Audit Rider, we have included contracts awarded as a result of formal advertising.
 9111-0415 - Drawings, Designs, Specifications. This article has been expanded to provide that proper facilities for inspection shall be afforded AEC and that the Contractor has a right to retain a copy of the material for its use.

U.S. DOE

Procurement and Assistance Management

Office of Policy

Reference Collection

148-023/FORS

Binder: AEC Manual 9100 1950s Edition

Revised: June 30, 1959

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4. 9111-0427 - Payments and Advances (CPFF).

- a. A minor change has been made in the language of subsection (c)(2) dealing with the responsibilities of the bank to proceed only upon written instructions of the Contracting Officer or his designated representative.
 - b. Subsection (2) (e) has been changed to delete the requirement for submission of the certified voucher. This change has also been made in 9111-0428, Payments.
5. Pages 9111-0434 through 9111-0438. These pages have been rewritten to delete the termination articles therefrom. These articles were previously lined out due to their inclusion in Chapter 9112.
 6. AEC Appendix 9111-072-B, Purchase Order Terms, designated as AEC Form 103a, has been revised to eliminate the certification therefrom and to reflect other minor changes.
 7. A revised Appendix 9111-097 has been added for suggested use by Operations Offices in obtaining contractor costs and price data for utilization in effecting any possible price redetermination.
 8. Changes on both pages of the Table of Contents have been made to give effect to the provisions contained in the revised pages referred to above.

Please file these revised pages in Part 9100 of your AEC Manual to replace the superseded pages scheduled above.

R. F. Jennings
for General Manager

Revised: June 30, 1959

TN-9000-90

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U. S. ATOMIC ENERGY COMMISSION
AEC MANUAL

Volume 9000 Contracting
Part 9100 Procurement and Contracts

AEC 9111-01
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*Canceled
9100-35*

Chapter 9111 CONTRACT FORMS AND PROVISIONS

9111-01 PURPOSE AND SCOPE.

This chapter sets forth (a) suggested outlines of contract forms, (b) an outline of contractual provisions for letter contracts, (c) a form of AEC purchase order, (d) policy covering, and a suggested form to be used in connection with price redetermination, and (e) price escalation articles. It is applicable to all AEC procurement offices and to AEC cost-type contractors to the extent indicated in 9111-02.

9111-02 GENERAL POLICY.

021 Use of Standard Contract Articles and Forms. It is the policy of AEC to use standard contract articles and forms wherever practicable. Uniformity in form and substance tends to insure impartial treatment of all contractors, expedites negotiation and contract review, and facilitates contract administration.

022 Applicability. The policies, procedures, and forms set forth in this chapter are applicable to all AEC direct procurements. Appropriate adaptations of the articles and forms set forth in this chapter shall be used by cost-type contractors where practicable.

023 Deviations in Contract Forms and Articles. Wherever possible, the outline of contract forms for various types of contracts and articles suggested in this chapter shall be followed. If it becomes necessary to make changes in the suggested forms, outlines or articles as a matter of standard practice, such changes shall be reported to the division director concerned so that consideration can be given to modification of the outlines, forms, or articles.

(The next page is AEC 9111-05-A)

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0442 Purchases from Contractor-Controlled Sources.

- a. Unless otherwise authorized, all solicitation of competitive bids for equipment, materials, and supplies of the kind and character manufactured or sold by the divisions, departments, or affiliates of the contractor will be handled by the Commission. In all such cases in which the contractor has design responsibility, the contractor shall prepare proper specifications, drawings, and such other data as may be necessary, on a basis which will permit fair and open competition and orderly and timely procurement with relation to the work. All bids shall be evaluated by and award made solely in the discretion of the Commission. All awards shall be made by the Commission unless it is agreed that some or all awards shall be made by the contractor.
- b. The contractor may procure on a negotiated basis materials, supplies, equipment, or services manufactured or sold by the contractors divisions, departments, or affiliates from such divisions, departments, or affiliates; provided, however, that unless otherwise authorized by the Commission, no such procurement shall be made by the contractor without prior written approval of the Commission.
- c. The price, terms, and conditions upon which any product or service shall be furnished by any other division, department, or affiliate of the contractor pursuant to this Article shall be at least as favorable to the Government as the price, terms, and conditions customarily applied in connection with the sale of such product or the furnishing of such service, in the quantities furnished, in the course of the contractor's usual commercial business.

(The next page is AEC 9111-05)

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HA000585

9111-05 Fixed-price Supply Contracts.

051 Purpose of Section. This section sets forth articles and forms required to be used in fixed-price supply contracts placed by formal advertising and a suggested outline of articles to be used in fixed-price supply contracts placed through negotiation.

052 Definition of Fixed-Price Supply Contract. As used in this section, the term "fixed-price supply contract" means any contract:

- a. entered into either by formal advertising or by negotiation, but excluding contracts or purchase orders for \$2500 or less, letter contracts and amendments or modifications thereto;
- b. at a fixed-price with or without provision for price escalation or redetermination, or other forms of price adjustment; and
- c. for supplies and services other than
 1. the construction, alteration, or repair of buildings, bridges, roads, or other kinds of real property;
 2. architect-engineer services;
 3. operating contracts;
 4. experimental, developmental or research work;
 5. personal services.

053 Formally Advertised Fixed-Price Supply Contracts.

- a. Standard Forms 26, 30, 31, 32 (October 1957 Edition), 33 and 36 (see appendix 9105-041) with the modifications and additions set forth in subparagraphs b. and c. below shall be used in all formally advertised fixed-price supply contracts except contracts for non-personal services. These forms may be used with appropriate modifications for formally advertised contracts for non-personal services (See subsection 9105-041 and GSA Reg. 1-II-209 for additional instructions as to the use of these forms.)
- b. The use of Standard Form 32, October 1957 Edition, is mandatory in formally advertised, fixed-price supply contracts as set forth in GSA Reg. 1-II-209. In order, however, to conform it to AEC special requirements, the following changes shall be made and shall be indicated in the alterations article referred to in subparagraph c. below.

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1. Delete subparagraph 1(b) of Standard Form 32 and substitute therefor the following: "The term 'Contracting Officer' means the person executing this contract on behalf of the Government and includes his successors or any duly authorized representative of any such person."

(The next page is AEC 9111-053)

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- (2) Add to subparagraph 1 of Standard Form 32 the following: "(d) The term 'Commission' means the United States Atomic Energy Commission or any duly authorized representative thereof including the Contracting Officer except for the purpose of deciding an appeal under the article entitled 'Disputes'."
- (c) The following articles shall be added to Standard Form 32 under the circumstances indicated below:
 - (1) Alterations and Additions--9111-044. (The purpose of this article is to provide a vehicle for incorporation of articles as appropriate in 9111-053 (b) and (c).)
 - (2) Safety, Health and Fire Protection--9111-039. This article shall be included in contracts within the scope of AEC Manual Chapters 0502, 0522, and 0550. In such cases, specific safety requirements, such as appropriate safety codes and any applicable reporting requirements shall be provided in the specifications or incorporated therein by reference and made readily available to prospective bidders or to persons with whom negotiations are conducted.
 - (3) Security--9111-0312. This article shall be used when security provisions are required. Specific security requirements not disclosed in this article such as physical security requirements shall be included or incorporated by reference in the specifications to the maximum extent feasible and made readily available to prospective bidders or to persons with whom negotiations are conducted.
 - (4) Renegotiation--9111-0321. This article shall be used in all contracts.
 - (5) Patent Indemnity--An appropriate patent indemnity article in favor of the Government in accordance with Chapter 9113-019c should be incorporated.
 - (6) Royalties. If the contract is in an amount which exceeds \$10,000 the article contained in AEC Manual Chapter 9113-0111 shall be included.
 - (7) Federal, State, and Local Taxes--The Tax Article as set forth in GSA Reg. 1-II-209.03b should be incorporated. However, consistent with the language of such prescribed tax article a provision may be added on advice of counsel specifically excluding from the contract price designated state or local taxes. Such added provision will not be regarded as a deviation from the prescribed article.
- (d) Special articles not inconsistent with the above may be added after consultation with Counsel. (See GSA Reg. 1-II-209.02c)

054 Suggested Outline of a Negotiated Fixed-price Supply Contract.

- (a) The following is a suggested outline of contract articles for a negotiated fixed-price supply contract:
- (1) Appropriate provision setting forth description of supplies, delivery requirements, shipping instructions and price.
 - (2) Definitions--9111-0414. ✓
 - (3) Changes--9111-047. ✓
 - (4) Extras--9111-0417.
 - (5) Variation in Quantity--9111-0437.
 - (6) Inspection--9111-0418.
 - (7) Responsibility for Supplies--9111-0431.
 - (8) Payments--9111-0428.
 - (9) Assignment--either 9111-037 or 9111-038.
 - (10) Additional Bond Security--9114-043.
 - (11) Taxes--appropriate article in accordance with Chapter 9115.
 - (12) Default--9111-0413.
 - (13) Disputes--9111-034.
 - (14) Appropriate patent article or articles--in accordance with Chapter 9113.
 - (15) Buy American Act--9110-019a.
 - (16) Convict Labor--9116-073.
 - (17) Eight-hour Law--subparagraph b of paragraph 9116-05 or Walsh-Healey Public Contracts Act--9116-066.
 - (18) Safety, Health and Fire Protection--9111-039 under the circumstances described in 9111-053(c)(2).
 - (19) Security--9111-0312 under the circumstances described in 9111-053(c)(3).
 - (20) Nondiscrimination in Employment--9116-083.

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TN-9000-90

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- (21) Officials not to Benefit -- 9111-036.
- (22) Covenant Against Contingent Fees - 9111-033.
- ✓(23) Examination of Records -- 9111-0311.
- (24) Notice of Labor Disputes -- 9111-0313.
- (25) Termination for Convenience of the Government -- 9112-071 or 9112-073 as appropriate.
- (26) Renegotiation -- 9111-0321.
- (27) Classification -- 9111-0322.
- (28) Use of Small Business Concerns -- 9111-0440.
- (29) Use of Concerns in Labor Surplus Areas -- 9111-0441.
- (b) Special articles not inconsistent with the above may be added after consultation with counsel. Any of the above articles may be omitted after consultation with counsel. Deviations in these articles may be made in accordance with 9111-023.

9111-06 Cost-Plus-a-Fixed-Fee Supply Contracts.

061 Purpose of Section. This section sets forth a suggested outline of contract articles to be included in cost-plus-a-fixed-fee supply contracts.

062 Definition of Cost-plus-a-fixed-fee Supply Contract. As used in this section, the term "cost-plus-a-fixed-fee supply contract" means any contract:

- (a) entered into by negotiation but excluding contracts of purchase orders for \$2500 or less, letter contracts and amendments or modifications thereto;
- (b) which provides for payment of all the contractor's allowable costs as defined in the contract; provides an estimate of the total cost; provides for payment of a fixed fee which does not vary with the actual cost;
- (c) for supplies and services other than:
 - (1) the construction, alteration, or repair of buildings, bridges, roads, or other kinds of real property;
 - (2) architect-engineer services;

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- (3) operating contracts;
- (4) experimental, developmental, or research work;
- (5) personal services.

063 Suggested Outline of a Cost-plus-a-fixed-fee Supply Contract.

- (a) The following is a suggested outline of contract articles for a negotiated cost-plus-a-fixed-fee supply contract.
 - (1) Definitions -- 9111-0414.
 - (2) Covenant Against Contingent Fees -- 9111-033.
 - (3) Officials not to Benefit -- 9111-036.
 - (4) Nondiscrimination in Employment -- 9116-083.
 - (5) Convict Labor -- 9116-073.
 - (6) Disputes -- 9111-034.
 - (7) Statement of Work -- 9111-0432.
 - (8) Drawings, Designs and Specifications -- 9111-0415.
 - (9) Changes -- 9111-046.
 - (10) Estimates and Fixed Fee -- 9111-0416.
 - (11) Consideration -- 9111-048.
 - (12) Cost and Expenses -- 9111-0412.
 - (13) Payments and Advances -- 9111-0427 and 9111-0428.
 - (14) Assignment -- 9111-037 or 9111-038 as appropriate.
 - (15) Accounts, Records and Inspection -- 9111-042.
 - (16) Examination of Records -- 9111-0311.
 - (17) Property -- 9119-043.
 - (18) Required Bonds and Insurance - Exclusive of Government Property -- 9114-041.

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9111-07 Order Form AEC-103

071 Purpose of Section. This section sets forth administrative requirements governing the use of Order Form AEC-103. This procedure applies only to AEC direct procurement.

072 Use of Order Form AEC-103 and Purchase Order Terms, Form AEC-103a. This order form is a combination purchase order delivery order (See appendix 9111-072 for samples of these forms) and is designed for the following uses incident to AEC direct procurement actions:

- a. as a delivery order, regardless of amount, for ordering supplies or services:
 1. under existing contracts, including contracts or agreements made by other Government agencies, provided the order is issued in accordance with and subject to the terms and conditions of the basic contract or agreement to which specific reference is made on the form;
 2. from other Government agencies.
- b. as a purchase order for open market or negotiated purchases when the amount is not in excess of \$2500 and when use of Standard Form 144, Purchase Order-Invoice-Voucher, or Standard Form 147, Order-Invoice-Voucher, is not practicable;
- c. as a purchase order for negotiated purchases when the amount exceeds \$2500. When so used the terms and conditions on Form AEC-103a should be supplemented to conform with the requirements of 9111-054. Contracting Officers should satisfy themselves that the Government's interests are adequately protected through use of the purchase order form rather than a more formal contractual document.

Standard Form 36 shall be used as a continuation sheet when required.

073 Ordering Forms.

- a. For those offices using 8 copies or fewer orders may be placed for interleaved carbon, snap-out forms in accordance with instructions for ordering AEC forms (chapter 0260). Specifications shall include information as to color of copies and distribution; i.e., original, consignee copy, purchase file copy, receiving report copy, fiscal copy, property records copy, memorandum copy, etc.

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- b. For those offices using more than 8 copies, the format prescribed in Appendix 9111-072 shall be used in ordering reproducible masters from which the form will be reproduced locally as required.

074 Numbering Order Forms. (See Chapter 9126.)

9111-08 Letter Contracts.

081 Purpose of Section. This section sets forth the general policy as to use and suggested provisions for letter contracts.

082 Definition. A letter contract is defined in 9106-119.

083 General Policy. The general policy governing the use of letter contracts is set forth in 9106-119.

084 Suggested Outline.

(a) The following is a suggested outline of a letter contract.

- (1) Contract number, date, name and address of contractor.
- (2) Direction to contractor to proceed immediately to furnish the supplies or to perform the work specified, followed by as detailed description of the supplies to be furnished or work to be performed as is practicable, together with desired delivery date or date of completion.
- (3) Provision that letter contract contains and resulting definitive contract will contain all applicable provisions required by Federal law, Executive Order or regulations.
- (4) Provision for (a) submission by the contractor of a quotation and/or estimate supported by a cost breakdown and agreement to enter into negotiation of a definitive contract immediately, and (b) type of definitive contract to be used.
- (5) Provision for the approval by the Commission of subcontracts and purchase orders required by this Manual and dollar limitation on the total amount the contractor may expend or obligate pending execution of the definitive contract.
- (6) Time limit within which letter contract will be superseded by definitive contract (normally 120 days). Provision for termination either (a) at any time for the convenience of the Government, or (b) in the event the parties fail to agree upon the terms of, and to execute, a definitive contract within the time specified or any extension.

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- (7) Provision for the reimbursement of the contractor for all reasonable and necessary costs for the work performed only when the termination is for the convenience of the Government. When termination results from failure to agree upon terms of a definitive contract within the time specified, or any extension thereof, this provision should exclude the payment of profit or fee.
- (8) The total payments under paragraph 7 above shall be limited to the total dollar amount authorized to be expended by the letter contract and shall be contingent upon transfer of title to the Government of all materials (including specifications and drawings) tools, machinery and work in process for which the contractor is receiving reimbursement or the obtaining of an appropriate disposal credit to the Government for them.
- (9) Appropriate security provisions.
- (10) Appropriate tax provisions.
- (11) Appropriate patent provisions.
- (12) Appropriate disputes provisions.
- (13) Appropriate examination of records provisions.
- (14) Provision against assignment without prior approval of the Commission in writing.
- (b) Ordinarily letter contracts will not contain any provision for payments to the contractor, except in the event of its termination, since it is contemplated that a definitive contract will be executed within a short period of time. If it becomes necessary to provide for such payments in the letter contract, such additional provisions as are necessary for the protection of the Government's interest shall be included.

9111-09 Use of Escalation and Price Redetermination Articles.

091 Purpose of Section. This section sets forth policies and conditions under which Escalation and Price Redetermination Articles shall be used.

092 General Policy. It is the policy of AEC to use firm fixed-price contracts, wherever practicable, in preference to contracts containing escalation provisions or price redetermination articles. Price escalation articles may be used only where it is determined either after initial invitations to bid have been issued, or in advance of initial invitations when avail-

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- (b) Principles Governing Negotiation, Additional General Limitations and Procedures Relating to Redetermined Prices. Any redetermined price or prices under this article shall be fair and reasonable under all the circumstances to the Contractor and to the Government. In the negotiation of such fair and reasonable redetermined price or prices the Contracting Officer may take into account, as a factor in determining a reasonable profit allowance, any unwarranted delay on the part of the Contractor in submitting the data specified in paragraph (c) at a time required by this article. Any redetermined price or prices under this article shall not exceed any applicable ceiling price or prices established pursuant to applicable law and regulations. Any redetermined price or prices and the manner of making necessary adjustments with respect to payments previously made by the Government shall be set forth in an amendment or amendments which shall be signed by the Contracting Officer and the Contractor. Where negotiation is required under this article, failure to agree upon any redetermined price or prices shall be deemed a dispute concerning a question of fact within the meaning of the article of this contract entitled "Disputes." Any redetermination of prices under this article shall be without prejudice to the rights of the Government under any statute or order now in effect, or under any other article of this contract. In connection with any price redetermination hereunder the Government may make such examination of the Contractor's accounts, records and books as the Contracting Officer may require and may make such audit thereof as the Contracting Officer may deem necessary.
- (c) Data to be Submitted by the Contractor. The data to be submitted by the Contractor under this article, itemized in such detail as the Contracting Officer may prescribe, shall consist of: (1) a new estimate and breakdown of the unit cost and the proposed prices of the items remaining under this contract after the effective date of the price redetermination; (2) an explanation of any differences between the last preceding estimate and the current estimate of costs; (3) such relevant shop and engineering data, cost records, overhead experience reports and accounting statements as may be of assistance in determining the accuracy and reliability of the current estimate of costs; (4) a statement of experienced costs of production hereunder at the time or times of the negotiation of the revision of prices hereunder; and (5) any other relevant data usually furnished in the case of negotiation of prices under a new contract. (The form suggested for use is set forth in Appendix 9111-097 DD Form 7847).

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- ¹ Whenever changes are made in the contract pursuant to the changes article, the total contract price shall be adjusted, where necessary, in accordance with such changes.
- ² If redetermination downward only is to be provided for, the following sentence should be substituted for this sentence:
"The total of such redetermined prices as established pursuant to any redetermination shall in no event exceed the total contract price as set forth in this contract prior to redetermination, less any part thereof applicable to any terminated portion of the work."
- ³ Where multiple redeterminations, upward or downward, are to be provided for, subparagraphs (1) and (2) should both be included in paragraph (a). Where a single redetermination only, whether upward or downward or downward only, is to be provided for subparagraph (2) should be entirely omitted.
- ⁴ In lieu of "Upon delivery of ____% of the articles specified to be furnished," any one of the following substitutes may be used:

"Upon delivery of ____units of the articles to be furnished,"

"Upon performance of (a specified portion of the work)"

"Upon delivery of articles representing ____% of the total contract price."
- ⁵ In the event wholly retroactive redetermination is to be provided for, the preceding language should be revised to read:
"Within ____days after completion or termination of this contract,".

later such redetermination is effected, the greater usually is the percentage that actual costs constitute of total costs, as redetermined, and consequently the lower the profit margin should be. Normally, the profit included in the original contract price is carried through price redetermination. However, if the contractor has performed an especially efficient and economical job, he should be rewarded with an increased profit margin, and conversely, when this performance has been below reasonable standards, his profit margin should be reduced.

3. Before agreeing to the use of a specific price redetermination article, the fact that the contractor has a cost accounting system of sufficient accuracy and reliability to allow the development of the cost information required by the provisions of such article should be established. The price redetermination article provides for such examination and audit of the books, records and accounts of the contractor as the Contracting Officer may deem necessary. The need and extent of such review of a contractor's accounting records is a matter of judgment to be determined in the light of such relevant factors as: (a) the nature and acceptability of cost and other data submitted by the contractor, (b) knowledge of the contractor's accounting policies and cost system, (c) reliability of the contractor's data on the basis of previous experience with the contractor, (d) any unusual circumstances which might affect the Government's interests, and (e) dollar amount of the contract.
4. Ceiling or maximum prices must be established at figures which will provide an effective incentive for economical performance. Accordingly, the need for close estimating in establishing maximum prices cannot be over-emphasized. Abnormally high "ceilings," "maximum prices" or "upset prices" have the potential disadvantages of cost-plus-a-percentage-of-cost contracting which must be avoided.
5. In order to keep the maximum price closely related to the cost of work currently required under the contract, provision should be made for adjusting the initial maximum price in the event of subsequent changes in quantity, plans or specifications, delivery schedule, or other elements of the scope of the work.
6. At the point agreed upon for redetermining the price, the firm price to be agreed upon may include an adjustment of the original profit. Such adjustment of profit is not to be based on a percentage of cost contractually established in

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advance, but should reflect a fair return to the contractor which takes into account his performance, cost reductions, degree of risk or other incentive factors.

c. Multiple Price Redetermination Upward or Downward.

1. Multiple price redetermination, upward or downward, is accomplished by use of the article set forth in 9111-097 with both subparagraphs (1) and (2) of paragraph (a) included. Subparagraph (1) provides for a negotiated upward or downward redetermination of unit prices upon completion of delivery of a specified percentage of the principal items called for by the contract. Thereafter, under subparagraph (2), there may be upward or downward revision of prices upon the written demand of either party, subject to specified limitations on the frequency of such demands. The initial (mandatory) price redetermination is retroactive to the start of the contract period as well as prospective in its application; any subsequent redeterminations have a prospective effect only. This form of price redetermination is especially suitable for a supply contract where the quantity under procurement is large, the delivery schedule calls for deliveries over a prolonged period (usually over a year), and an accurate forecast of production costs is not feasible.
2. This clause readily lends itself to modification to meet the special needs of different situations where price redetermination, wholly or partly prospective in effect, is desirable. Thus, it might be considered desirable (or the contractor might insist) that price redeterminations be made at specified regular intervals, rather than at irregular intervals upon the demand of either party, after the initial price revision (in which event, subparagraph (2) of paragraph (a) should be reworded to specify the redetermination or target dates after the initial price redetermination); or that only one price redetermination upward or downward be made at a specified point in the contract period (in which event, subparagraph (2) of paragraph (a) should be omitted); or, further, that only one price redetermination downward only be made at a specified point in the contract period (in which event, subparagraph (2) of paragraph (a) should be omitted and the change noted in footnote 1 to the article should be made). Where provision is made for only one price revision during the contract period, such revision should be both retroactive and prospective in effect. In a case where only one or a limited number of price redeterminations will be allowed, care should be taken in setting the points of redetermination or

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- (2) No unit price shall be increased in accordance with such request except as to those supplies delivered pursuant to the terms of this contract and for which the Contractor is required to pay to the manufacturer an increased price.
- (3) No unit price shall be increased by an amount greater than the amount the manufacturer's price to the Contractor is increased.
- (4) The aggregate of the increases in any unit price made under this section shall not exceed 10 per cent of the original applicable contract unit price.
- (c) In the event the requested adjustment in any contract unit price is acceptable to the Contracting Officer, he shall not later than 20 days after the date of receipt by him of the request so notify the Contractor, and the contract shall be modified accordingly. If any such requested adjustment in a unit price is not acceptable to the Contracting Officer, he shall so notify the Contractor in writing within 20 days from the date of receipt by him of the Contractor's said notice; and unless an agreement can be reached as to the amount of increase, the Government may cancel without liability to either party the Contractor's right to proceed with performance of the portion of the contract which is undelivered at the time of such cancellation.
- (d) During the period prior to such cancellation, the Contractor shall continue deliveries according to the terms of the contract and shall be paid therefor at the applicable increased unit price so requested, provided such requested increase satisfies all of the conditions and does not exceed the limitations of paragraph (b).
- (e) If notice of cancellation is not sent to the Contractor within thirty days after receipt by the Contracting Officer of the Contractor's request, supplies delivered subsequent to the date specified in such request, and prior to the effective date of any subsequent increase or decrease in Contractor's applicable price, shall be paid for at the applicable increased unit price so requested, provided, such requested increase satisfies all of the conditions and does not exceed the limitations of paragraph (b).
- (f) Upon the written request of the Contracting Officer, the Contractor shall furnish to the Contracting Officer the manufacturer's prices (to the Contractor) for the supplies covered by this contract that were in effect on the date set

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for the opening of the bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising).

- h. Price Escalation Article for Standard Aluminum Items. The article for Standard Steel items, 9111-095f can be made suitable for use in contracts covering standard aluminum items by deleting the last sentence of paragraph (c) of the article.

096 Price Redetermination.

- a. Purpose. The general purpose, function and circumstances under which a price redetermination article should be used are covered by 9106-115.
- b. General Policy.
1. The text of the price redetermination article set forth in 9111-097 permits upward as well as downward redetermination. Under such circumstances, provision is made for setting a limit on the amount of any upward price revision by fixing a ceiling price for the contract. Where upward price redetermination is allowed, a ceiling price should be set in order to encourage the contractor to perform efficiently. The range of allowable upward price revision from the contract or target price (which should contain substantially no allowance for contingencies) to the ceiling price should be a reasonable measure of the contingencies against which the contractor is being protected, any costs allowed the contractor in price redetermination above the contract or target price should be without profit. An upward price revision of 10% of the target price is generally regarded as a reasonable limit and, except for unusual circumstances, 20% should be considered the maximum allowable upward limit.
 2. The profit margin included in the original contract price should be a reasonable measure of the risk being assumed by the contractor. Thus, where there is evidence of close pricing in the original contract price, subject to downward redetermination only, the contractor is deserving of a larger profit margin than would be the case where such contract price is known to include a substantial contingency allowance. Similarly, the greater the spread between the contract or target price and the ceiling price, the greater the extent to which, as a general rule, the Government is assuming contingent risks, and the lower the profit margin should be. Again, in a case where provision is made for a single price redetermination during the contract period, the

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- (3) No adjusted unit price shall be effective earlier than the effective date of any increase in the applicable established price and no increase shall be granted unless the Contractor's applicable established price has increased subsequent to the date set for opening of bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising).
- (c) In the event the requested adjustment in any contract unit price is acceptable to the Contracting Officer, he shall not later than 20 days after the date of receipt by him of the request so notify the Contractor and the contract shall be modified accordingly. If any such requested adjustment in a unit price is not acceptable to the Contracting Officer, he shall so notify the Contractor in writing within 20 days from the date of receipt by him of the Contractor's said notice; and unless an agreement can be reached as to the amount of increase, the Government may cancel without liability to either party the Contractor's right to proceed with performance of the portion of the contract which is undelivered at the time of such cancellation, except that the Contractor may make delivery of all or any of the supplies which a duly authorized officer of the company shall certify were completed or in the process of manufacture at the time of receipt of notice of such cancellation, and the Government shall pay for all supplies so delivered at the applicable unit price contained in the Contractor's said request and the contract shall be modified accordingly, provided, that such certification is made within 10 days after receipt of notice of such cancellation and such requested increase satisfies all of the conditions and does not exceed the limitations of paragraph (b). Supplies shall be deemed to be in the process of manufacture when the steel therefor is in any state of processing after the beginning of the furnace melt.
- (d) During the period to such cancellation, the Contractor shall continue deliveries according to the terms of the contract and shall be paid therefor at the applicable increased unit prices so requested, provided, such requested increases satisfy all of the conditions and do not exceed the limitations of paragraph (b).
- (e) If notice of cancellation is not sent to the Contractor within 30 days after receipt by the Contracting Officer of the Contractor's request, supplies delivered subsequent to the date specified in such request, and prior to the effective date of any subsequent increase or decrease in Contractor's applicable established prices, shall be paid for at the applicable

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increased unit prices so requested, provided, such requested increases satisfy all of the conditions and do not exceed the limitations of paragraph (b).

NOTE: By the deletion of the last sentence of paragraph (c) above, this clause is made suitable for use in contracts covering standard aluminum items.

- g. Price Escalation Article for Standard Steel Items (Non-producer). This article is intended for use in contracts with suppliers (who are not the manufacturers) of standard steel items, and ties adjustments in the contract prices to fluctuations in the manufacturer's prices to the contractor for those items.

Price Escalation Article for Standard Steel Items (Non-producer)

- (a) The parties agree that if, subsequent to the date set for opening of bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising), the manufacturer of the supplies covered by this contract reduces his price to the Contractor for such supplies, the unit price to be paid hereunder to the Contractor shall be reduced for those supplies delivered by the Contractor after the effective date of the reduction in the manufacturer's price. In each such instance, the applicable contract unit price shall be reduced by the same amount that the manufacturer's price to the Contractor is reduced. The Contractor will notify the Contracting Officer of such reductions and the contract will be modified accordingly.
- (b) The Contractor may at any time, or from time to time, after the date set for opening of bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising), request in writing an upward adjustment in any of the contract unit prices, subject to the following conditions:
- (1) No unit price shall be increased in accordance with such request unless the manufacturer of the supplies to be delivered under this contract increases his price to the Contractor for such supplies and no increase shall be granted unless the manufacturer's applicable price has increased subsequent to the date set for opening of bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising).

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of termination of any item for default on the part of the Contractor, any price revision shall be limited to the quantity of each item which has been delivered by the contractor and accepted by the Government prior to receipt by the contractor of notice of termination for default.

- (h) As used in this article, the phrase "the month in which delivery of supplies is required to be made in accordance with the terms of this contract" shall mean any month in which under the terms of this contract a specific quantity of units of the supplies called for by this contract is required to be delivered; provided, however, that in case the failure of the Contractor to make delivery of such quantity shall have arisen out of causes beyond the control and without the fault or negligence of the Contractor, the quantity not delivered shall be required to be delivered as promptly as possible after the cessation of the cause of such failure, and the delivery schedule set forth in this contract shall be amended accordingly. Such causes of failure include, but are not restricted to, acts of God or of the public enemy, acts of the Government, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, and defaults of subcontractors due to any of such causes unless the Contracting Officer shall determine that the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the contractor to meet the required delivery schedule.
- (i) Failure to agree upon any determination to be made under this article shall be a dispute concerning a question of fact within the meaning of the article of this contract entitled "Disputes."

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1. In the first blank in paragraph (c), there would be inserted the actual shop in which the basic steel item, identified in paragraph (d), would be finally fabricated or processed into the actual contract item. In the third blank of paragraph (c), there would be inserted the month in which the contractor submitted its quotation.
2. In the third blank in paragraph (d), there would be inserted the actual standard steel mill item used by

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the Contractor in the manufacture of the contract item. The price which is to be inserted in the first blank in paragraph (d) is the actual price of such item, including the base price of the material and all applicable extras in effect on the date of quotation. In the fifth blank in paragraph (d), there would be inserted the number of days which represents the contractor's best estimate of the period of time required for processing said standard steel mill item in the shop identified in paragraph (c).

- f. Price Escalation Article for Standard Steel Items. This article for the procurement of Standard Steel Items from manufacturers is applicable to both advertised and negotiated procurement.

Price Escalation Article for Standard Steel Items

- (a) The Contractor hereby warrants that the unit prices stated herein on the date set for opening of bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising) are not in excess of the Contractor's applicable established prices for like quantities of the supplies covered by this contract. The Contractor shall notify the Contracting Officer of each decrease in any of such established prices and each applicable contract unit price shall be decreased accordingly. Any decrease in a unit price shall become effective concurrently with the effective date of each applicable decrease in Contractor's established price and the contract shall be amended accordingly.
- (b) The Contractor may at any time, or from time to time, after the date set for opening of bids (or the contract date if this is a negotiated contract rather than one entered into by means of formal advertising) and during the performance of the contract request in writing an upward adjustment in any of the contract unit prices to be effective as from a date to be specified by the Contractor, subject to the following conditions:
- (1) No unit price as adjusted shall exceed the Contractor's applicable established price.
 - (2) The aggregate of the increases in any unit price made under this paragraph shall not exceed 10 per cent (10%) of the original applicable contract unit price.

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- (c) For the purposes of this clause, the term "Labor index" shall mean the average straight time hourly earnings of the contractor's employees in the _____ shop of the Contractor's _____ plant for any particular month. (The word "month" as used herein means "calendar month"). Unless otherwise specified in this contract, the labor index shall be computed by dividing the total straight time payroll of the Contractor's employees in the particular shop identified above for any given month by the total number of straight time hours worked by such employees in that month. Any revision in a contract unit price to reflect changes in the cost of labor shall be computed solely by reference to the "base labor index" which shall be the average of the labor indices for the three months consisting of the month of _____ 19____, the month immediately preceding and the month immediately following, and to the "current labor index" which shall be the average of the labor indices for the month in which delivery of supplies is required to be made in accordance with the terms of this contract, and the month preceding.
- (d) Any revision in a contract unit price to reflect changes in the cost of steel shall be computed solely by reference to the "base steel index," which shall be the Contractor's established or published price to the public including all applicable extras of \$ _____ per _____ (unit) for _____ (description of steel item) on _____ 19____, and the "current steel index" which shall be the Contractor's established or published price to the public of said item including all applicable extras in effect _____ days prior to the first day of the month in which delivery of supplies is required to be made in accordance with the terms of the contract.
- (e) Each contract unit price shall be revised for each month in which, by the terms of this contract, delivery of supplies is required to be made, and such revised contract unit price(s) shall apply to the deliveries of those quantities of supplies required to be made in that month regardless of when actual delivery be made of said quantities of supplies. Each revised contract unit price for any month shall be computed by adding together the following three amounts: (i) the amount (representing the adjusted cost of labor) obtained by multiplying _____ per cent of the contract unit price by a fraction, the numerator of which shall be the current labor index and the denominator of which shall be the base labor index, (ii) the amount (representing the adjusted cost of steel) obtained by multiplying _____ per cent of the contract unit price by a

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fraction the numerator of which shall be the current steel index and the denominator of which shall be the base steel index, and (iii) the amount equal to _____ per cent of the original contract unit price (representing that portion of such unit price which relates neither to the cost of labor nor to the cost of steel and which is therefore not subject to revision); provided, however, that any revised contract unit price made pursuant to the provisions of this article shall in no event exceed 110% of the original contract unit price. All computations shall be made to the nearest one hundredth of one cent.

- (f) Pending revisions of the contract unit price(s), if any, to be made pursuant to this article, the Contractor shall be paid the contract unit price(s) for deliveries made. Within thirty days after the final delivery of supplies, or within such further period of time as may be authorized by the Contracting Officer, the Contractor shall furnish a statement or statements signed by the official supervising accounting with respect to this contract setting forth and certifying the correctness of (i) the average straight time hourly earnings of the Contractor's employees in the _____ shop of the Contractor which are relevant to the computations of the "base labor index" and the "current labor index," and (ii) the Contractor's established or published prices to the public including all applicable extras, for like quantities of _____ which are relevant to the computation of the "base steel index" and the "current steel index." Upon request of the Contracting Officer or his duly authorized representative, the Contractor shall make available its records used in the computation of the labor indices. After the receipt of such certificate by the Contracting Officer, the revised contract unit price(s) shall be computed in accordance with the provisions of this article and this contract shall be amended accordingly.
- (g) In the event of any total or partial termination of any item of this contract for the convenience of the Government, the month in which notice of such termination is received by the Contractor, if prior to the month in which delivery is required by this contract, shall be considered the month in which delivery of such terminated or partially terminated item is required for the purpose of determining the current labor and materials indices under paragraph (c) and (d) hereof; provided, however, that as to the quantity of such item which is not terminated for convenience, the month in which delivery is required by this contract shall continue to apply for determining said indices. In the case

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allowance to cover the possibility of increased costs of performance resulting from increases in either (i) the Contractor's rates of pay for labor employed by him or (ii) the prices which the Contractor is required to pay for material. The Contractor further represents and warrants that the net price or prices paid or to be paid by the Government under this contract do not and shall not exceed those paid by any other purchaser or consignee for like quantities of the same or similar supplies. The Contractor also agrees to give the Government any and all discount benefits extended by it to any other purchaser or consignee purchasing or handling like quantities of the same or similar supplies covered by this contract.

- (b) In the event that, at any time during the performance of this contract, the Contractor shall pay rates of pay for direct labor employed by him or prices for direct material in excess of or less than those current as of the date of this contract, provided that any such change would result in an increase or decrease of at least 3% of the then aggregate contract price of the uncompleted units of the contract, then in either such event the unit prices set forth in this contract may be revised upward or downward in accordance with the provisions of paragraph (c) hereof, with respect to units completed subsequent to the effective date of any such increase or decrease by an amount equivalent to the increase or decrease in cost per uncompleted unit occasioned by the increase or decrease in direct labor wage rates or in prices for direct material or in both.
- (c) Not later than twenty (20) days after the effective date of any increase or decrease as referred to in paragraph (b) hereof, the Contractor may notify the Contracting Officer of any such increase, and shall notify the Contracting Officer of any such decrease, and with such notification shall submit evidence of costs satisfactory to the Contracting Officer. Such evidence of costs (i) shall be prepared in accordance with recognized commercial accounting principles, and (ii) shall be signed by a responsible official of the Contractor. Upon the basis of such notification and evidence of costs, and such other data as may be available to the Contracting Officer or as shall be furnished to him upon request to the Contractor, a price adjustment to reflect the increase or decrease in costs as referred to in paragraph (b) hereof shall be determined by mutual agreement between the Contractor and the Contracting Officer, and shall be set forth in an amendment to this contract. In the event the Contractor fails to give notice of any decrease as required herein, a downward adjustment shall be later

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effected with respect to units completed subsequent to the effective date of any such decrease.

- (d) Price adjustments may be agreed upon, at any time and from time to time during the performance of this contract, in accordance with the provisions of this clause. In no event, however, shall any price adjustment be made for increased or decreased costs resulting from an increase or decrease as related to the original contract estimates, in number of hours of labor, in amounts of material purchased, or in overhead charges; or which would increase or decrease the estimated dollar amount of profit per unit originally included in the contract price. The increase or accumulated increases in unit prices made under this article shall not exceed 10% of the original contract unit price.
 - (e) Pending a determination of any price adjustment under this article, the Contractor shall continue deliveries hereunder. Failure of the parties to agree upon a price adjustment pursuant to the provisions of this article shall be deemed to be a dispute as to a question of fact within the meaning of the article of this contract entitled "Disputes."
- e. Escalation Article for Non-Standard Steel Items. This article is intended for use in those cases where the items being procured are non-standard steel items made wholly or in major part of steel, and where the contractor is a steel producer and actually manufactures the basic steel items, referenced in paragraph (d) of article, from which the non-standard item is fabricated.

Escalation Article for Non-standard Steel Items

- (a) The Contractor represents that the prices set forth in this contract do not include any contingency allowance to cover the possibility of increased costs of performance resulting from increases in either (i) the Contractor's rates of pay for labor employed by it, or (ii) the prices which the Contractor charges its manufacturing shops for the steel required in the performance of this contract.
- (b) Each contract unit price shall be subject to revision, pursuant to the provisions of this article, to reflect changes in the costs of labor and steel. For the purpose of any such price revision, the proportion of the contract unit price attributable to costs of labor not otherwise included in the price of the steel item identified in paragraph (d) below, shall be _____ per cent, and the proportion of the contract unit price attributable to the cost of steel shall be _____ per cent.

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allowance to cover the possibility of increased costs of performance resulting from increases in either (1) the Contractor's rates of pay for labor employed by him; or (2) the prices which the Contractor is required to pay for material. The Contractor further represents and warrants that the net price or prices paid or to be paid by the Government under this contract do not and shall not exceed those paid by any other purchaser or consignee for like quantities of the same or similar supplies. The Contractor also agrees to give the Government any and all discount benefits extended by it to any other purchaser or consignee purchasing or handling like quantities of the same or similar supplies covered by this contract.

- (b) In the event that, at any time during the performance of this contract, the Contractor shall pay rates of pay for direct labor employed by him or prices for direct material in excess of or less than those current as of the date of this contract, provided that any such change would result in an increase or decrease of at least three per cent (3%) of the then aggregate contract price of the uncompleted units of the contract, then in either such event the unit prices set forth in this contract may be revised upward or downward in accordance with the provisions of paragraph (c) hereof, with respect to the units completed subsequent to the effective date of any such increase or decrease by an amount equivalent to the increase or decrease in cost per uncompleted unit occasioned by the increase or decrease in direct labor wage rates or in prices for direct material or in both.
- (c) Not later than twenty (20) days after the effective date of any increase or decrease as referred to in paragraph (b) hereof, the Contractor may notify the Contracting Officer of any such increase, and shall notify the Contracting Officer of any such decrease, and with such notification shall submit a supporting cost break-down. Such cost break-down will--
 - (1) Be prepared in accordance with recognized commercial accounting principles.
 - (2) Indicate changes in estimated direct labor and direct material costs resulting from any increase or decrease as referred to in paragraph (b) hereof.
 - (3) Be signed by a responsible official of the Contractor.

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Upon the basis of such notification and cost breakdown, and such other data as may be available to the Contracting Officer or as shall be furnished to him upon request to the Contractor, a price adjustment to reflect the increase or decrease in costs as referred to in paragraph (b) hereof shall be determined by mutual agreement between the Contractor and the Contracting Officer, and shall be set forth in an amendment to this contract. In the event that the Contractor fails to give notice of any decrease as required herein, a downward adjustment shall be later effected with respect to units completed subsequent to the effective date of any such decrease.

- (d) Price adjustments may be agreed upon, at any time and from time to time during the performance of this contract, in accordance with the provisions of this article. In no event, however, shall any price adjustments be made:
 - (1) For increased or decreased costs resulting from an increase or decrease as related to the original contract estimates, in number of hours of labor, in amounts of material purchased, or in overhead charges; or
 - (2) Which would increase or decrease the estimated dollar amount of profit per unit originally included in the contract price.
- (e) The increase or accumulated increases in unit prices made under this article shall not exceed ten per cent (10%) of the original contract unit price.
- (f) Pending a determination of any price adjustment under this article the Contractor shall continue deliveries hereunder. Failure of the parties to agree upon a price adjustment pursuant to the provisions of this Article shall be deemed to be a dispute as to a question of fact within the meaning of the Article of this contract entitled "Disputes."

- d. General Price Escalation Article (No Cost Breakdowns). This article may be used in lieu of the article described in 9111-095c in instances where the contractor is either unable or unwilling to furnish a cost breakdown. In such instances, prices should be otherwise adequately justified and the contract should normally be for less than \$100,000.

General Price Escalation Article (No Cost Breakdowns)

- (a) The Contractor represents and warrants that the prices set forth in this contract do not include any contingency

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- (e) The Contractor also agrees to give the Government any and all discount benefits extended to any company, agency, organization, or individual purchasing or handling like quantities of the supplies covered by this contract.
- b. Established Price Article for Semi-Standard Items. This article pegs the price of a semi-standard item to the "nearest commercial equivalent" for which there is an established price. The article should not be used if the contractor does not customarily deal in standard items and if the standard items or "nearest commercial equivalents" to which the contract unit prices are pegged are not items for which the contractor has an active commercial market. As required by the provisions of paragraph (c) of the article, agreement must be reached as to the "nearest commercial equivalent" for each contract item and its established price at the date of the contract must be set forth in that paragraph. This article should not be used unless a substantial portion of the contractor's business is with purchasers other than the Government, nor should it be used if the contractor will accept some other more suitable article (for example the articles suggested in 9111-095c and 095d).

Established Price Article for Semi-standard Items

- (a) The Contractor warrants that the materials covered by this contract are materials which the Contractor customarily offers for sale commercially, modified in accordance with the specifications of this contract, and that any differences between the prices provided herein at the effective date hereof and its established or published prices for like quantities of the materials which are the nearest commercial equivalents of the materials covered by this contract (hereinafter referred to as "the established prices") are due to differences in costs resulting from compliance with such specifications. If at any time during the performance of this contract any of the established prices are reduced, each applicable price set forth herein (which, as changed at any time or from time to time in accordance with the provisions of the article hereof entitled "Changes," are hereinafter referred to as "the contract prices") shall be reduced by the same percentage that such established price is reduced. Upon such a reduction in any of the established prices the contractor shall advise the Contracting Officer of the reduction to be made in any of the contract prices and the effective date of the reduction in the applicable established price. Any such reduced price shall be effective as to deliveries made on and after the effective date of the reduction in the applicable established price and the contract shall be modified accordingly.

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(b) If at any time during the performance of the contract any of the established prices are increased, the contractor may request in writing the same percentage increase in the applicable contract price of the material to be delivered after a date not earlier than the date the request is mailed to the Contracting Officer, provided, that the Contractor may not request under this article a unit price for any item which will exceed by more than 10 per cent the original contract unit price. In the event the requested adjustment in any contract unit price is acceptable to the Contracting Officer, he shall not later than twenty days after the receipt of the request so notify the contractor, and the contract shall be modified accordingly. If the requested upward adjustment in price is not acceptable to the Contracting Officer and he shall so indicate by withholding approval of it for a period of twenty days from the date of delivery to him of the Contractor's written request, and if within a succeeding ten day period the Contractor shall not elect to continue deliveries at the prices in effect immediately prior to his request, then the contract shall be deemed to have been terminated for the convenience of the Government pursuant to the Article hereof entitled "Terminations," only with respect to the item or items for which the Contracting Officer has so withheld approval of the requested upward adjustment.

(c) For the purposes of this section, it is agreed by the Contractor and the Government that the nearest commercial equivalent of the material covered by this contract is _____ and that the established price therefor, at the effective date hereof is \$ _____.

c. General Price Escalation Article Involving Cost Breakdowns. This article can be used in fixed-price contracts for standard, semi-standard, or non-standard items. The provision in paragraph (b) of the article limiting adjustments to amounts equivalent to at least 3% of the then aggregate contract price should not be considered inflexible. In the case of a large contract, the contractor might insist on the use of a lower percentage figure. In the case of a small contract, it might be in the interest of the Government to use a higher percentage figure. There does not appear to be any objection to the use of a reasonable dollar amount in lieu of a percentage figure.

General Price Escalation Article Involving Cost Breakdowns.

(a) The Contractor represents and warrants that the prices set forth in this contract do not include any contingency

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prices and wage rates have not been included in this section because:

- (a) Such price indices reflect average increases or decreases in material prices and wage rates and do not, therefore, generally accurately reflect increases or decreases in a particular contractor's actual payments for material and labor. Contract price changes, therefore, made on this basis are likely to be unfair, either to the contractor or to the Government.
 - (b) Statistics included either in general or industry-wide price indices are accumulated on a broad, over-all coverage basis and do not accurately reflect increases or decreases in material prices or wage rates as applied to the equipment or material being purchased under a particular contract.
2. For above reasons it is suggested that price escalation articles be used which provide for contract price modifications based on increases or decreases in the contractor's actual payments for material and labor. When it is determined, for cogent reasons, that a price escalation article based on increases or decreases in a general or industry-wide price index must be used, every effort should be made to select an index which a study of past experience for a representative period indicates most nearly conforms to the contractor's actual experience for the same period. The contract file will indicate the reasons for using an escalation article based on a general or industry-wide price index and also why the particular index used was selected.

095 Suggested Escalation Articles. The following are suggested escalation articles. Deviations in these articles may be made in accordance with 9111-023.

- 9-75006-7
- a. Established Price Article for Standard Off-the-shelf Items. This article should not be used unless a substantial portion of the contractor's business is with purchasers other than the Government. The article can be used in open-end or indefinite quantity contracts, but its use is not limited to such contracts.

Established Price Article for Standard Off-the-shelf Items
(Escalation)

- (a) The Contractor hereby warrants that the unit prices stated herein at the effective date hereof are not in excess of the Contractor's applicable established prices for like quantities of the supplies covered by this contract. The Contractor

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tor shall notify the Contracting Officer of each decrease in any such established prices and each applicable contract unit price shall be decreased accordingly. Any decrease in a unit price shall become effective concurrently with the effective date of each applicable decrease in Contractor's established price and the contract shall be amended accordingly.

- (b) The Contractor may at any time, or from time to time, during the performance of the contract request in writing an upward adjustment in any of the contract unit prices to be effective as from a date to be specified by the contractor, subject to the following conditions:
 - (1) No unit price shall be increased in accordance with such request by a greater percentage than the applicable established price is increased.
 - (2) The aggregate of the increases in any unit price made under this paragraph shall not exceed 10 per cent of the original applicable contract unit price.
 - (3) No adjusted unit price shall be effective earlier than the effective date of any increase in the applicable established price.
- (c) In the event the requested adjustment in any contract unit price is acceptable to the Contracting Officer, he shall not later than 20 days after the date of receipt by him of the request so notify the Contractor and the contract shall be modified accordingly. If any such requested adjustment in a unit price is not acceptable to the Contracting Officer, he shall so notify the Contractor in writing within 20 days from the date of receipt by him of the Contractor's said notice; and unless an agreement can be reached as to the amount of increase, the Government may cancel without liability to either party the Contractor's right to proceed with performance of the portion of the contract which is undelivered at the time of such cancellation.
- (d) If notice of cancellation is not sent to the Contractor within 30 days after receipt by the Contracting Officer of the Contractor's request, supplies delivered subsequent to the date specified in such request, and prior to the effective date of any subsequent increase or decrease in Contractor's applicable established prices, shall be paid for at the applicable increased unit prices so requested, provided such requested increases satisfy all of the conditions and do not exceed the limitations of paragraph (b).

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percentage ceiling on escalation shall be considered non-responsive. If only one bid is received and that bid is qualified by a provision for price increase which has no monetary or percentage ceiling, and time does not permit re-advertisement, or it is administratively determined that re-advertisement will produce no better bids, the bid should be rejected and negotiation conducted with the sole bidder or any other qualified supplier, aimed at obtaining a more favorable contract in which a maximum obligation is established. Where two or more bids are received, including one containing a provision for escalation with no ceiling, and another making a firm bid higher than the base of the escalated bid, there are two courses which should be considered in determining the one which is in the best interest of the Government; (a) accept the firm bid; or (b) if the firm bid is considered unreasonably high in comparison with the base of the escalated bid or on any other basis of comparison, all bids may be rejected and either re-advertisement or negotiation used, depending on circumstances, to obtain a more favorable contract for the Government. If all bids are rejected, appropriate notice of this fact should be given to all bidders.

2. Where Invitations for Bids request bids either on a firm price basis or on an escalated price basis. When it has been determined on the basis of information available in advance of initial solicitation that the use of escalation provisions is necessary, invitations for bids should indicate that bids containing price escalation will be accepted and evaluated in the amount of the original bid price plus the maximum upward escalation. The invitation for bids will include a suitable price escalation article and will request bidders desiring to submit escalated bids to do so on the basis of this article. Upon receipt of bids, evaluation and subsequent proceedings will be in accordance with procedures set forth in subparagraph 1 above.
3. Amendment of Invitations for Bids to Include price escalation articles. If, after issuance of invitations for bids without provisions for escalation but prior to the opening thereof, it is determined that escalation provisions are appropriate, the invitations should be amended in that respect and the opening date extended where necessary. In the event that it is determined after the opening of bids that the use of price escalation articles is necessary, all bids should be rejected and the requirements either re-advertised, if practicable, or negotiated, if permissible under Chapter 9106.

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- 9-7-55-37-1-11
Disregard
4. Negotiated procurement. With respect to negotiated procurement, the procedures relating to the inclusion of escalation provisions are less rigid than those used in formal advertising. Where a proposal is received containing a deviation with respect to the escalation article it is discretionary on the part of the Contracting Officer to accept or reject the terms of such proposal after negotiation in that respect.
 5. Procurement covering on-site construction labor. As a general rule the provisions of an escalation article should not be made applicable to procurement covering on-site construction labor in a fixed-price contract. To permit such escalation brings about a cost reimbursement provision that is generally not subject to managerial incentives to keep costs at a minimum nor capable of control through use of objective standards. There will however be special cases where a major CPFF contractor is engaged on a project or part of a project and where the performance of the CPFF contract, because of increased wages or work week, will exercise a controlling effect over the wage rates of either fixed-price prime collateral contracts or of sub-contracts.

In these cases, rather than pay for the sizeable contingency which the fixed-price contractor would otherwise require for his protection, the Manager of Operations may find it desirable to provide in the fixed-price contract for reimbursement of increases in wage rates approved by the Contracting Officer.

- d. Limitations. Upward price escalation is generally limited to 10% of original contract unit prices. In cases where a limitation in this amount would not be equitable either to the contractor or the Government, appropriate higher or lower percentages may be substituted. However, in a negotiated contract, when considering a higher limitation on escalation the profit allowed should be considered in the light of the risk assumed, and therefore lower profit factors should be sought to offset decreased risks. Escalation provisions should not be used when articles purchased are carried in stock in the day-to-day operation of the prospective supplier.
- e. Use of General Price Indices.
 1. Escalation articles providing for contract price modifications, tied to general or industry-wide indices of material

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able information on price, supply, market conditions, trade practices, etc., indicates:

- a. that the use of such an article is necessary to prevent payment of unreasonable prices by the Government due to the inclusion of excessive contingency allowances in firm fixed-price bids, or
- b. that the use of such an article is necessary to obtain adequate competition from qualified suppliers.

093 Price Escalation Compared with Price Redetermination. The following points should be considered in determining whether to use a price escalation article or a price redetermination article in a specific contract:

- a. Since price escalation articles are limited to increases or decreases in material prices or labor rates, they are suitable for use either in contracts placed by formal advertising or by negotiation.
- b. Price redetermination articles are suitable for use only in negotiated contracts. They are designed so that the Government assumes a portion of the contractor's risk involving such factors as prolonged delivery schedules, unstable market conditions for material or labor, or uncertainty of the cost of performance. In return for this assumption of risk, the Government obtains: (1) the elimination of contingency allowances in the contractor's cost estimates, (2) the contractual right to redetermine the contract price by negotiation one or more times during the life of the contract based upon actual production costs, and (3) a lower rate of profit than would be the case where all risks are assumed by the contractor.
- c. With respect to negotiated contracts, price escalation articles should be used only in those cases where the variable cost factors involved are limited to increases or decreases in material prices or labor rates. This situation is generally confined to procurements of: (1) commercial items, either without modification or with minor modification to meet AEC requirements, and (2) items peculiar to AEC and for which satisfactory prior production costs are available. Price redetermination articles should generally be used in such contracts when there are other variable cost factors involved of a substantial nature; usually because the item has been substantially modified to meet AEC requirements; or the item is peculiar to AEC; and in either case the production cost information available is insufficient or unsuitable for negotiation of a firm fixed-price contract. In addition, price redetermination articles should be used where it is determined, after negotiation, that

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the lowest firm fixed-price which is acceptable to the contractor does not constitute a fair and reasonable price to the Government.

- d. Price escalation articles are used primarily where serious doubt exists as to the hourly rates to be paid for labor and the unit prices to be paid for materials. Price redetermination articles, on the other hand are designed primarily to provide protection against possibly incorrect estimates of the required quantities of labor and material, but can, in addition provide protection against possible fluctuations in labor rates and material prices. It is therefore generally recommended that where it is intended to provide for both price escalation and price redetermination in the same contract, an appropriate price redetermination article alone should be used in preference to separate price escalation and price redetermination provisions.

094 Price Escalation Articles.

- a. Definition. The term "price escalation article" means a contractual provision whereby the selling price (unit or lump sum) may be increased or decreased during the life of the contract in accordance with increases or decreases in material prices or labor rates, or both.
- b. Purpose. The general purpose and function of price escalation articles are discussed in 9106-12. The circumstances under which each of the approved forms of escalation articles should be used are set forth in 9111-095a through 095h.
- c. General Procedures. The following procedures are applicable to various situations involving price escalation articles as related to the issuance or amendment of Invitations for Bids and the evaluation of bids received:
 1. Where Invitations for Bids are silent regarding price escalation. When it has been determined on the basis of information available in advance of initial solicitation that adequate competition resulting in reasonable firm fixed-price bids will probably be obtained from qualified suppliers, invitations for bids will not contain any reference to price escalation. Any bid furnished in response to an invitation for bid of this type which contains a price escalation article shall be considered as a firm bid in the amount of the original bid price plus the maximum upward escalation. Bids based on seller's price at time of delivery or other escalation provisions which do not provide a monetary or

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target dates so that the contractor will have had sufficient production experience at each target date to develop actual cost information on the basis of which reasonable prices can be set for the next prospective period. For example, where provision is made for a single price redetermination, the target date should be so set that the contractor will be able to get through the starting-up period, when costs are usually high, and be able to operate for a few months at the maximum capacity called for by the delivery requirements of the contract, when costs should be typical of expected experience for the balance of the contract, before he will have to draw off his actual cost experience for price revision. A target date set at 40% to 50% of completion of deliveries is usually considered desirable under such circumstances.

- d. Single Price Redetermination Downward only, Wholly Retroactive. This form of price redetermination is accomplished by omitting subparagraph (2) of paragraph (a) and making the changes noted in footnotes 2 and 5 to the article, thereby providing for a single, negotiated, downward redetermination, wholly retroactive, after completion or termination of the contract. The price redetermination article, so modified, is designed primarily for use in small to moderate-sized contracts (approximately \$100,000 or less) for experimental or developmental items or services. However, it may also be used in contracts of similar size for the procurement of any item or service when it is not possible to determine reasonableness of price at the time of negotiation.
- e. Single Price Redetermination Upward or Downward, Wholly Retroactive. This form of price redetermination is accomplished by omitting subparagraph (2) of paragraph (a) and making the change noted in footnote 5 to the article, thereby providing for a single, negotiated, upward or downward redetermination, wholly retroactive, after completion or termination of the contract. The price redetermination article, so modified, is designed for use in negotiated contracts for supplies or services, where the quantity under procurement may be either moderate or large, and where the contract period is not extended (usually less than a year) so that it is not feasible to attempt to redetermine the contract price during the period of the contract. Care should be taken to agree upon a contract or target price that will require the contractor to do an efficient job, and, since redetermination is wholly retroactive, it is essential that a limit be placed on any upward price revision (normally an amount not in excess of 10% of the contract or target price).

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097 Suggested Price Redetermination Article. The following is a suggested Price Redetermination Article. Deviations may be made in this article in accordance with 9111-023. *See ACPR - 9-7.5006-37*

Price Redetermination. The price or prices stated in this contract shall be subject to redetermination in accordance with the provisions of this article. In no event shall the total contract price, as revised hereunder, exceed \$ _____ .¹ and ²

(a) Time for Redetermination.³

- (1) Upon delivery of _____ % of the total number of articles specified to be furnished⁴ under this contract, or at such earlier time as the Contracting Officer may direct in the event of any termination by the Government of work under this contract,⁵ the contractor shall submit to the Contracting Officer the data specified in paragraph (c) of this article. On the basis of such information, and of any other relevant information which may be available to the Contracting Officer, the price or prices set forth in this contract shall be redetermined by agreement of the Contracting Officer and the contractor. Any redetermined price or prices established under this subparagraph shall be effective as of the date of this contract and shall apply to all articles covered by the contract, whether already delivered or yet to be delivered.
- (2) Prior to expiration or termination of this contract, but not sooner than ninety (90) days after the effective date of any price redetermination under subparagraph (1), either party to the contract may at its option by written notice addressed to the other require that the parties negotiate a further redetermination of such redetermined price or prices to become effective as of the date of the notice or some later date specified therein, and thereafter from time to time by similar notices may require that the parties again negotiate further price redeterminations to become effective as of dates not earlier than ninety (90) days after the effective date of the redetermined price or prices then in effect. The data specified in paragraph (c) shall accompany any notice by the contractor under this subparagraph, and shall be submitted by the contractor to the Contracting Officer within thirty (30) days after receipt of any notice hereunder from the Government. Any redetermined price or prices established under this subparagraph shall apply only to articles yet to be delivered.

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CONTRACT FORMS AND PROVISIONS

AEC Appendix
9111-072-A

Form AEC 103
Revised Dec. 7, 1953

Page _____ of _____ Pages

ORDER U. S. ATOMIC ENERGY COMMISSION POINT OF ISSUE: _____			THIS NUMBER MUST APPEAR ON ALL PACKAGES AND PAPERS RELATING TO THIS ORDER.		
☐ PURCHASE ORDER PER YOUR _____ OF _____			ORDER NO. _____		
☐ DELIVERY ORDER UNDER CONTRACT NO. _____			REQUISITION NO. _____		
COST SYMBOL ALLOTMENT APPROPRIATION SYMBOL AND TITLE			DATE _____		
TO S E L L E R			CONSIGNEE AND DESTINATION S H I P T O VIA Rec P. O. No.		
DELIVERY F.O.B.		TIME FOR DELIVERY		GOV'T B/L NO.	
DISCOUNT TERMS					
Please furnish the following on the terms specified on both sides of this sheet and on the attached sheets, if any, except that any such terms which might be inconsistent with the terms of any existing Federal contract or agreement under which this order is placed will not apply.					
ITEM NO.	ARTICLES OR SERVICES	QUAN.	UNIT	UNIT PRICE	AMOUNT
Submit Invoice in ORIGINAL only in accordance with instructions on reverse and forward to U. S. ATOMIC ENERGY COMMISSION					TOTAL _____
SIGNATURE NAME (Authorized Purchasing, or Contracting Officer)					

TN-9000-91

Revised: July 21, 1959

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Form AEC-104
(5-55)

PURCHASE ORDER TERMS

1. DEFINITIONS.—As used in this contract:

(a) the term "Contracting Officer" means the person executing this contract on behalf of the Government and includes his successors or any duly authorized representative of any such person.

(b) the term "Commission" means the United States Atomic Energy Commission or any duly authorized representative thereof, including the Contracting Officer except for the purpose of deciding an appeal under the clause entitled "Disputes."

2. VENDOR'S BILLING INSTRUCTIONS.—Vendor's invoices shall contain the following information: Contract or proposal number (if any), order number, and item number, description of supplies or services, sizes, quantities, unit prices, and extended totals. Bill of lading number and weight of shipment will be shown for shipments made on Government bills of lading. If prepaid parcel-post charges are billed, the gross weight and shipping point must be shown on the invoice.

3. COVENANT AGAINST CONTINGENT FEES.—The Contractor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty the Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

4. OFFICIALS NOT TO BENEFIT.—No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

5. NONDISCRIMINATION IN EMPLOYMENT.—In connection with the performance of work under this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of the nondiscrimination article. The Contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

6. CONVICT LABOR.—In connection with the performance of work under this contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment at hard labor.

7. BUY AMERICAN ACT.—(a) In acquiring end products, the Buy American Act (41 U. S. Code 10 a-d) provides that the Government give preference to domestic source end products. For the purpose of this clause:

(i) "components" means those articles, materials, and supplies, which are directly incorporated in the end products;

(ii) "end products" means those articles, materials, and supplies, which are to be acquired under this contract for public use; and

(iii) a "domestic source end product" means (A) an unmanufactured end product which has been mined or produced in the United States and (B) an end product manufactured in the United States if the cost of the components thereof which are mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. For the purposes of this (a) (iii) (B), components of foreign origin of the same type or kind as the products referred to in (b) (ii) or (iii) of this clause shall be treated as components mined, produced or manufactured in the United States.

(b) The Contractor agrees that there will be delivered under this contract only domestic source end products, except end products:

(i) which are for use outside the United States;

(ii) which the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality;

(iii) as to which the Commission determines the domestic preference to be inconsistent with the public interest; or

(iv) as to which the Commission determines the cost to the Government to be unreasonable.

(The foregoing requirements are administered in accordance with Executive Order No. 10582, dated December 17, 1954.)

8. DISCOUNTS.—In connection with any discount offered, time will be computed from date of delivery of the supplies to carrier when delivery and acceptance are at point of origin, or from date of delivery at destination or port of embarkation when delivery and acceptance are at either of those points, or from date correct invoice or voucher is received in the office specified by the Government if the latter date is later than the date of delivery. Payment is deemed to be made for the purpose of earning the discount, on the date of mailing of the Government check.

9. INSPECTION.—Except as may be otherwise provided in this contract, final inspection and acceptance will be made at destination. Supplies rejected at destination for nonconformance with specifications shall be removed by the contractor at his expense promptly after notice of rejection.

10. EIGHT-HOUR LAW OF 1912—OVERTIME COMPENSATION.—This contract, to the extent that it is of a character specified in the Eight-Hour Law of 1912, as amended (40 U. S. Code 324-326) and is not covered by the Walsh-Healey Public Contracts Act (41 U. S. Code 35-45) is subject to the following provisions and exceptions of said Eight-Hour Law of 1912, as amended, and to all other provisions and exceptions of said Law:

No laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the Contractor or any subcontractor contracting for any part of said work contemplated, shall be required or permitted to work more than eight hours in any one calendar day upon such work, except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this clause. The wages of every laborer and mechanic employed by the Contractor or any subcontractor engaged in the performance of this contract shall be computed on a basic day rate of eight hours per day; and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For each violation of the requirements of this clause a penalty of five dollars shall be imposed for each laborer or mechanic for every calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this clause, and all penalties thus imposed shall be withheld for the use and benefit of the Government.

11. FEDERAL, STATE, AND LOCAL TAXES.—Except as may be otherwise provided in this contract, the contract price includes all applicable Federal taxes in effect on the date of this contract but does not include any State or local sales, use, or other tax directly applicable to the completed supplies or services covered by this contract nor any other tax from which the Contractor or this transaction is exempt. Upon request of the Contractor, the Government shall furnish a tax exemption certificate or similar evidence of exemption with respect to any such tax not included in the contract price pursuant to this clause. For the purpose of this clause, the term "date of this contract" means the date of the Contractor's quotation or, if no quotation, the date of this purchase order.

12. RENEGOTIATION.—If this purchase order is subject to the Renegotiation Act of 1951, as amended (P. L. 9, 82d Cong., 65 Stat. 7; P. L. 764, 83d Cong., 68 Stat. 1116; P. L. 216, 84th Cong., 69 Stat. 447; P. L. 870, 84th Cong., 70 Stat. 786), the purchase order shall be deemed to contain all the provisions required by section 104 of said Act.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1950-071000

Revised: July 21, 1959

TN-9000-91

HA000623

INSTRUCTIONS FOR PREPARING COST ANALYSIS FOR CONTRACT PRICE REDETERMINATION

GENERAL INSTRUCTIONS

If repricing is to be accomplished after completion of the contract, only columns B, C, and F need be used.

Your proposal should consist of:

- (i) Where practicable, a separate completed price analysis for each contract item subject to redetermination, except that identical supplies or services may be consolidated on one form, and
- (ii) The supporting schedules, statements, etc., required by the specific instructions listed below.

The proposal should indicate, under remarks, any changes, change authorizations, etc., requiring separate pricing actions which have

not been received as of the Cut-Off Date and the treatment of the unresolved pricing action in the preparation of the redetermination proposal should be fully explained.

Some of the supplementary schedules, statements, etc., prepared for one price analysis may be applicable to the price analyses of other contract items in the same contract. If so, one such schedule, statement, etc., will be sufficient for the price analysis of the group of contract items.

Indicate the price analysis or group of price analyses to which each supplementary schedule, statement, etc., relates.

SPECIFIC INSTRUCTIONS

(a) **CONTRACT ITEM NUMBERS** - Enter the numbers specified in the contract for the contract items to which your proposal relates.

(b) **CUT-OFF DATE** - Enter the date specified in or determined in accordance with the contract as of which cost data supporting the redetermination proposal are to be submitted.

(c) **NUMBER OF UNITS COMPLETED AND NUMBER OF UNITS TO BE COMPLETED** - Enter the number of units completed during the period for which experienced costs of production are being submitted, and the number of units to be completed to the completion of the contract.

(d) **PREPRODUCTION COSTS** - Enter in this column all costs incurred under the contract prior to starting production and other non-recurring costs (usually referred to as "starting-load" costs) from your books and records as of the cut-off date (exclusive of special tooling). These include, but are not limited to, such costs as pre-production engineering, special plant rearrangement, training program, and any identifiable non-recurring costs such as initial re-work spoilage, pilot runs, etc. In the event the amounts of the foregoing are not segregated in or otherwise available from your records, enter in this column your best estimates of such costs and indicate that such costs are estimated by inserting an "E" in the column beside each estimated figure. If any such estimate contains provision for experienced or anticipated allowances, such as shrinkage, material handling, design changes, etc., explain under remarks.

(e) **PRODUCTION COSTS AND WORK IN PROCESS** - Enter in column C the production costs per contractor's books and records (exclusive of preproduction costs reported in column B) of the units completed as of the cut-off date. Enter in column D the costs of Work-in-Process as determined from your records or inventories at the cut-off date. Where the amounts for Work-in-Process are not available in your records but reliable estimates for them can be made, enter the estimated amounts in column D and enter in column C the differences between the total incurred costs (exclusive of Preproduction Costs) as of the cut-off date and these estimates. All usage of estimates should be noted by inserting an "E" in the column beside the estimated figures. If any such estimate contains provision for experienced or anticipated allowances, such as shrinkage, material handling, design changes, etc., explain under remarks. In addition to the above, where practicable, it is desired that experienced unit costs be submitted, on a separate schedule, on a month by month basis for a two to three month period immediately prior to the cut-off date to facilitate negotiation of forward prices.

(v) If the subcontract prices are subject to redetermination, indicate the date redetermination occurred and the results thereof. If redetermination has not been accomplished, indicate the date it is expected to be accomplished and the basis for estimating the cost of such subcontract(s) for purpose of this price proposal.

(vi) Was competition obtained in placing such subcontract(s)? If competition was obtained, indicate the extent of competition. If competition was not obtained, explain why it was not obtained.

(vii) Indicate organizational relationship (division, affiliate, subsidiary, etc.), if any, of subcontractor to contractor or whether common control or interest exists.

(j) **INTERDIVISIONAL TRANSFERS** - Include at cost to you. Under remarks explain the method of pricing by feeder division(s) and amount of profit, if any, to feeder division(s).

(k) **DIRECT ENGINEERING LABOR COST AND DIRECT MANUFACTURING LABOR COST** - Enter only the straight time labor cost chargeable directly to the item(s) covered by this price proposal. Enter on line 13 the direct labor overtime premium applicable to this proposal.

(l) **ENGINEERING BURDEN, MANUFACTURING BURDEN, GENERAL AND ADMINISTRATIVE EXPENSES, OVERTIME PREMIUM, AND SPECIAL TOOLING BURDEN** -

(i) Enter overtime premium (direct and indirect) on line 13 or 26, as appropriate, of the proposal.

(ii) On a separate schedule furnish the following information for each department involved in the contract performance of item(s) covered by this price proposal:

(1) The amount of burden, exclusive of overtime premium, allocated to the contract.

(2) The derivation of the burden rate used in computing the amount of such burden.

(iii) Under remarks indicate whether scrap is credited to burden or to raw and stores material.

(m) **SPOILAGE AND REWORK COSTS** - On a separate schedule show a breakdown of spoilage and rework cost into its various elements, i.e., labor, material, burden, etc.

(f) **ESTIMATED COSTS TO COMPLETE - MARK ALL ESTIMATES WITH AN "E".** Be prepared to describe, at time of negotiation meeting, methods and principles used in estimating the costs necessary to complete. As examples, the following information would generally be appropriate and may be included with your letter of transmittal if you wish:

- (I) **Material** - Extent to which firm prices have been obtained from vendors, anticipated variations in material quantities and prices, etc.
- (II) **Labor** - Estimated labor hours and rates for completion, the extent to which learning or increased efficiency have been considered, etc.
- (III) **Overhead** - Forecasted operational and budget data.

(g) **PURCHASED PARTS** - Parts or assemblies purchased for the procurement item, other than (I) subcontracted items as described in instruction (i), (II) Government-furnished property, or (III) parts fabricated by the prime contractor.

(h) **OFF-THE-SHELF ITEMS** - Items normally fabricated in whole or in part by you which are standard items of production normally stocked in inventory before commencement of work on this contract. Under remarks explain your method of costing "Off-The Shelf" items, i.e., actual cost, best customer price, retail price, or other basis.

(i) **SUBCONTRACTED ITEMS** - Parts, assemblies, or services produced or performed by other than the prime contractor in accordance with designs, specifications, or directions of the prime contractor, and applicable only to the prime contract. Enter on line 14, the totals for all subcontracted items of Direct Material. On a separate schedule furnish the following information for each subcontract or subcontracts to any one subcontractor aggregating or expected to aggregate \$100,000 or more:

- (I) Name and address of subcontractor.
- (II) Brief description of materials ordered.
- (III) The type of contracts such as fixed price, fixed price subject to escalation or with provision for price redetermination, cost-plus-a-fixed-fee, etc.
- (IV) The dollar amount of the subcontract(s).

(a) **PACKAGING AND CRATING COSTS** -

(I) If this item is subcontracted furnish on a separate schedule the information required in instruction (i) for each subcontract or subcontracts to any one subcontractor aggregating or expected to aggregate \$100,000 or more.

(II) If this item is not subcontracted, furnish on a separate schedule a breakdown of the amount into its various elements, i.e., labor, material, burden, etc.

(e) **TOTAL MANUFACTURING COST** - If standard costs have been used, indicate whether they have been adjusted to actual by checking "yes" or "no" on line 9.

(p) **ROYALTIES** - If the total shown on line 14 is in excess of \$250, on a separate schedule furnish the following information on each separate item of royalty or license fee: name and address of licensor, date of license agreement; patent numbers, patent application serial numbers or other basis on which the royalty is payable; brief description, including any part or model numbers of each contract item or component on which the royalty is payable; percentage or dollar rate of royalty per unit; unit price of contract item, number of units, and total dollar amount of royalties. In addition, if specifically requested by the contracting officer, a copy of the current license agreement and identification of applicable claims of specific patents shall be furnished.

(q) **SPECIAL TOOLING** - Include only items of the character described in ASPR 13-101.(e). On a separate schedule furnish a list of the special tooling acquired and proposed to be charged directly to contract which upon completion of the contract will be delivered to the government or disposed of as directed by the contracting officer.

(r) **DELIVERIES** - Enter in column G the number of units actually delivered in each month up to the cut-off date, enter in column H the number of units expected to be delivered in each month over balance of contract; and enter in column I the number of units scheduled for delivery in each month pursuant to the terms of the contract.

REMARKS (Attach additional sheets if necessary)

Top of Front - DD Form 784

DEPARTMENT OF DEFENSE COST AND PRICE ANALYSIS FOR CONTRACT PRICE REDETERMINATION		NOTE: If your cost accounting system does not permit analysis of costs as required below, contact the purchasing office for further instructions.		Form Approved Budget Bureau No. 22-R147	
PRIME CONTRACTOR (Name and address)			CONTRACT NUMBER		
			CONTRACT ITEM NUMBER: (a)		
DIVISION(S) - DEPARTMENT(S) & LOCATION(S) (Where work is performed)			MANUFACTURING PERIOD (Exclusive of preproduction) FROM _____ TO _____		
SUPPLIES AND/OR SERVICES:					
CUTOFF DATE (b)	NUMBER OF UNITS		AMOUNT OF		
	COMPLETED (c)	TO BE COMPLETED (d)	CONTRACT	REDETERMINATION PROPOSAL	DIFFERENCE
ITEMS (Excluding special tooling) A	PREPRO- DUCTION COSTS (d) B	PRO- DUCTION COSTS (e) C	COST OF WORK IN PROCESS (e) D	ESTIMATED COSTS TO COMPLETE (f) E	TOTAL F
1. DIRECT MATERIAL					
a. RAW AND STORES MATERIAL					
b. PURCHASED PARTS (d)					
c. OFF-THE-SHELF ITEMS (h)					
d. SUBCONTRACTED ITEMS (i)					
e. INTERDIVISIONAL TRANSFERS (j)					
2. DIRECT ENGINEERING LABOR (k) (See item 20)					
3. ENGINEERING BURDEN (l)					
4. DIRECT MANUFACTURING LABOR (k) (See item 21)					
5. MANUFACTURING BURDEN (l)					
6. SPOILAGE & REWORK (m)					
7. PACKAGING & CRATING (n)					
8. OTHER COSTS:					
9. TOTAL MANUFACTURING ☐ YES ☐ NO (o)					
10. GENERAL & ADM. EXPENSE (l)					
11. TOTAL (Items 1-10)					
12. PROFIT					
13. OVERTIME PREMIUM (h) (l)					

DD FORM 784 APR 65 REPLACES EDITION OF 1 JUN 57 WHICH MAY BE USED UNTIL 30 SEP 68. U.S. GOVERNMENT PRINTING OFFICE: 1964 O - 355111

TN-9000-91

HA000627

* AGREEMENT FOR SPECIAL BANK ACCOUNT

* Agreement entered into this day of, 196..., between the United States of America, (hereinafter called the Government), represented herein by the United States Atomic Energy Commission (hereinafter referred to as the "Commission"), hereinafter called the "Contractor", a corporation under the laws of the State of, and, hereinafter called the Bank, a banking corporation under the laws of, located at

RECITALS

(a) Under date of, 196..., the Commission and the Contractor entered into Contract(s) No. or a Supplemental Agreement thereto, providing for the making of advances of Government funds to the Contractor. Copy of such advance provisions has been furnished to the Bank.

(b) The Commission requires that amounts advanced to the Contractor under said contract or Supplemental Agreement be deposited in a Special Bank Account or accounts with a bank designated by the Treasury Department as a depository and financial agent of the government (Section 10 of the Act of June 11, 1942, - 56 Stat. 356; 12 USC 265), separate from any of the Contractor's general or other funds; and, the Bank being such a bank, the parties are agreeable to so depositing said amounts with the Bank.

(c) This Special Bank Account shall be designated

".....
(Name of Contractor) (Contract No.)

United States Atomic Energy Commission Special Bank Account."

COVENANTS

In consideration of the foregoing, and for other good and valuable considerations, it is agreed that:

(1) The Government shall have title to the credit balance in said account to secure the return of all advances made to the Contractor, which title shall be superior to any lien or claim of the Bank or others with respect to such account.

(2) The Bank will be bound by the provisions of said contract or contracts relating to the deposit and withdrawal of funds in the above Special Bank Account, but shall not be responsible for the application of funds properly withdrawn from said account. After receipt by the Bank of written directions from the Contracting Officer, or from the duly authorized representative of the Contracting Officer or the Manager of the Operations

Approved: April 8, 1960

HA000628

Office of the Commission, the Bank shall act thereon and shall be under no liability to any party hereto for any action taken in accordance with the said written directions.

(3) The Government, or its authorized representatives, shall have access to the books and records maintained by the Bank with respect to such Special Bank Account at all reasonable times and for all reasonable purposes, including, without limitation, the inspection or copying of such books and records and any and all memoranda, checks, correspondence or documents appertaining thereto. Such books and records shall be preserved by the Bank for a period of six (6) years after the closing of this Special Bank Account.

(4) In the event of the service of any writ of attachment, levy of execution, or commencement of garnishment proceedings with respect to the Special Bank Account, the Bank will promptly notify the Manager,
Operations Office, United States Atomic Energy Commission.

In witness whereof the parties hereto have caused this Agreement to be executed as of the day and year first above written.

Handwritten signature and initials

.....
(Signatures and official titles) *

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE
5/17/63

THIS CHANGE NOTICE APPLIES TO:
PURCHASE ORDER NO. 73-Y-297800-MPT
DATED 5/16/63

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: MR. R. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR *See Attached Letter*)

WAPB-NAC PUR-318-C, 318-D
NR TECHNICAL APPROVAL
RD:NR: J.C. KEISTER J#11,849

CONFIRMING ORAL AND TELEGRAM TO MR. G. HOWLAND
ON 5/17/63.

CHANGE NOTICE NO 97

1. THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS THE RESULT OF THIS
CHANGE NOTICE.

2. AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS
FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

3. THE SCOPE OF WORK COVERED BY THIS CHANGE NOTICE IS AS PROVIDED BY
PARAGRAPH NO. 3 OF CHANGE NOTICE NO 67, AND AS PROVIDED HEREIN.

DO E-2 APPLIES.

PAGE 1 OF 5

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR V.W. LEHTONEN/BMG R4
ATTENTION OF:

BUYER

AUTHORIZED BY:

JOS

A. HEEKE JR.

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)

FROM

ACKNOWLEDGED & ACCEPTED BY

Noted by *See Attached Letter*

J.C. Keister

(SIGNED FOR SUPPLIER)

DATE

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Metals & Controls, Inc.
Attleboro, Mass.

CHANGE NOTICE NO. 97

4. This change notice firm prices Change Notice No. 67 at a total price of \$254,777.00, \$25,000.00 of which was previously incorporated by Change Notice No. 67 with termination date of April 19, 1963. This date was extended to April 26, 1963, May 3, 1963, and May 8, 1963, by Change Notices No. 73, 84, and 89 respectively.

5. Refer to Order Attachment No. 5 and make the following quantity changes:

Item

1.1

1.2

6. The following is added as section 1.5 of Order Attachment 5, "List of Government Material, Components, and Equipment to be supplied by Westinghouse".

<u>Quantity</u>	<u>Order Specification</u>
130 Pcs.	Mil-Z-19859-B dated 9/15/61
456 Pcs.	

7. Refer to Order Attachment No. 1 Article 27 (f) (1) and make the following quantity changes:

<u>Element Type</u>	<u>Drawing No.</u>	<u>From</u>	<u>To</u>
	949D039, Item 3		

8. Refer to Order Attachment No. 9A and make the following quantity and delivery changes:

<u>Material</u>	<u>Reference</u>	<u>Pc. or Item No.</u>	<u>Amount</u>	<u>Not Later Than</u>
	Attachment 1, Article 27 (f)(1)	949D039, Item 3		8/17/63
	Attachment 5	Item 1.5	586 Pcs.	90%: 5/10/63 10%: 6/1/63

9. The following is added as paragraph (1), Article 27, of Attachment 1, General Provisions, to the order.

(1) [REDACTED]
(1) [REDACTED] as listed in section 1.5 of Attachment No. 5, at no cost to Seller, FOB Carrier, Seller's Plant, freight prepaid.

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Metals and Controls, Inc.
Attleboro, Massachusetts

CHANGE NOTICE NO. 97

(2) Title [REDACTED] shall remain in the Government, except that, upon delivery and acceptance of the core, title to all the residue of such material shall vest in Seller. All scrap generated from fabrication of such material becomes the property of Seller upon delivery and acceptance of the core, and shall be disposed of at his expense.

(3) In the event Seller requires additional sircaloy material, upon Seller's request to Westinghouse, Westinghouse shall make available for purchase by Seller, at average inventory prices, additional sponge meeting the specifications of AT-(11-1)-389.

(4) After final acceptance by Seller, Seller shall be solely responsible for sircaloy material furnished by Westinghouse or additional sponge made available for purchase by Seller and shall bear all risks for subsequent rejection. After final acceptance by Seller, Seller shall be solely responsible for such property; shall bear all risks for subsequent rejection whether or not due to unknown or latent defects; and Westinghouse shall not be obligated to replace defective or rejectable property nor be liable for loss by reason of plant shutdown, non-operation or increased expense of operation or any other consequential loss or damage.

10. The following comments apply to this change notice:

A. The development and preproduction requirements will be combined into one program, since the H-3 elements are basically the same as Types P-1 and C-1 being fabricated at M&C. The preproduction program will consist of fabricating 20 dummy and 40 enriched [REDACTED] elements. Bettis is not obligated to pay [REDACTED]

B. Bettis agrees the following equipment can be used interchangeably [REDACTED] provided M&C shall meet all the other requirements of the order.

(1) [REDACTED]

(2) Fuel weighing scales and handling equipment [REDACTED]

(3) [REDACTED]

(4) [REDACTED] and X-ray Room).

(5) Spot welding equipment.

(6) Helit-arc weldingchill and related equipment.

(7) Evacuation.

[REDACTED]

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Metals & Controls, Inc.
Attleboro, Mass.

CHANGE NOTICE NO. 97

(8) [REDACTED]

- C. Cleaning of equipment will be performed [REDACTED] in a manner similar to that used by M&C when changing from the handling of enriched to natural uranium. It is noted that "back-cleaning" is not required. [REDACTED] The cleaning procedure will be submitted for approval.
- D. Controls presently being used at M&C [REDACTED] will be used without change for the H-3's. The H-3 control procedure will be submitted for approval.
- E. M&C will follow processes [REDACTED] provided M&C shall meet all the other requirements of the order. Such processes will be approved and the submittal will include critical dimension [REDACTED]
- [REDACTED]

G. Release for production will be based on presentation at M&C of qualification data to BAPL representatives with a formal Preproduction Report to follow at a later date. Qualification will be based on evaluation of attributes, confidence statements, and physical dimensions of at least 10 preproduction elements.

H. Taper requirements will meet requirements of the contract as specified by approved M&C's.

I. [REDACTED]

J. [REDACTED]

K. [REDACTED]

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-X-297300-MPT

Metals and Controls, Inc.
Attleboro, Massachusetts

CHANGE NOTICE NO. 97

1. The wrought product Zircaloy supplied by Bettis will meet contract specification requirements or approved deviations thereof. [REDACTED] sizes proffered by Bettis are of sufficient size to yield M&C component size requirements with the exception of end pieces. In this case, there will be less material available for clean-up of the component than is normally provided for by M&C. Should end piece components be rejected for this reason, M&C is to be provided an additional equivalent amount [REDACTED] Westinghouse's responsibility is limited to replacement of this material.
11. The total price of this change notice does not contain monies for destructive evaluation to specification L-500 Standard A.
12. Items No. 7 and 8 above reiterate the changes previously identified in Paragraph No. 4 of Change Notice No. 67.
13. Refer to Order Attachment No. 3, and change the "Suggested Use" identified in Paragraphs 1.1 and 1.2 to read: [REDACTED] supplied by Westinghouse."

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

7/19/63

THIS CHANGE NOTICE APPLIES TO:
PURCHASE ORDER NO.

73-Y-297800-MPT

DATED

5/16/62

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR *See 7/5/63 1188*)

CHANGE NOTICE NO. 142

JUL 25 1963

1. THERE IS NO CHANGE IN THE PRICE OR DELIVERY DATE OF THIS ORDER AS THE
RESULT OF THIS CHANGE NOTICE.

(CONTINUED ON PAGE 2)

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR V.W. LEHTONEN/BMG R4 BUYER
ATTENTION OF:

AUTHORIZED BY

PURCHASING AGENT

WILL SHIP / DATE

FROM

JOS. A. HEENE

Accepted & signed by
JOS. A. HEENE
(SIGNED FOR BUYER)
R.L. Churchill 5/1/63

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION

THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

CHANGE NOTICE NO. 142

-2-

2. Reference Order Attachment No. 9A, Schedule of Westinghouse Furnished Material to Seller, and add the following:

<u>Material</u>	<u>Reference</u>	<u>Piece or Item No.</u>	<u>Amount</u>	<u>Not Later Than</u>
[REDACTED]	Attach. 5	1.1	[REDACTED]	8/24/63 10/19/63
[REDACTED]	Attach. 5	1.2, 1.3, & 1.4	[REDACTED]	8/24/63 10/19/63

3. This change notice updates Order Attachment No. 9, based on changes to Order Attachment No. 5 per Change Notices No. 7 and 97, and removes Seller's previous conditional acknowledgment of Change Notice No. 97.
- [REDACTED]

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

8/7/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

73-Y-297800-MPT

DATED

5/16/62

METALS & CONTROLS, INC.

P.O. BOX 898

ATTLEBORO, MASS.

ATTN: MR. R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR *RECEIVED BY R.L. CHURCHILL*)

CHANGE NOTICE NO. 158

AUG 13 1963

1. THERE IS NO CHANGE IN THE DELIVERY DATE OF THIS ORDER AS THE RESULT OF THIS CHANGE NOTICE.

(CONTINUED ON PAGE 2)

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR
ATTENTION OF:

V.W. LEHTONEN/BMG

R4

BUYER

AUTHORIZED BY:

R. C. ...

PURCHASING AGENT

JOS. A. ...

ACKNOWLEDGMENT

WILL SHIP / DATE

FROM

SIGNED FOR SUPPLIER

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Page 2

Metals & Controls, Inc.
P.O. Box 898
Attleboro, Mass.

CHANGE NOTICE NO. 158

2. Reference Change Notice No. 142, dated 7/19/63; Paragraph 2 on Page 2 thereof is changed to read as follows:

2. Reference Order Attachment No. 9A, Schedule of Westinghouse
Furnished Material to Seller, and add the following:

<u>Material</u>	<u>Reference</u>	<u>Piece or Item No.</u>	<u>Amount</u>	<u>Not Later Than</u>
[REDACTED]	Attach. 5	1.1	[REDACTED]	8/24/63 10/19/63
[REDACTED]	Attach. 5	1.2, 1.3, & 1.4	[REDACTED]	8/24/63 10/19/63

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE
8/19/63

THIS CHANGE NOTICE APPLIES TO:
PURCHASE ORDER NO. 73-Y-297800-MPT
DATED 5/16/62

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: MR. R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR C/K 1/5/ M&C NUCLEAR

CHANGE NOTICE NO. 174

AUG 26 1963

CONFIRMING TWX TO MR. G. HOWLAND ON 8/19/63.

1. THERE IS NO CHANGE IN THE DELIVERY DATE OF THIS ORDER AS THE RESULT OF THIS CHANGE NOTICE.
2. AS THE RESULT OF THIS CHANGE NOTICE, THE ORDER PRICE IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

[REDACTED]

ACKNOWLEDGMENT
RETURN TO SENDER
WITHIN 10 DAYS
AFTER DATE
MAY BE CAUSE FOR
CANCELLATION

[REDACTED]

ACKNOWLEDGMENT
FAILURE TO SIGN
WITHIN 10 DAYS
AFTER DATE
MAY BE CAUSE FOR
CANCELLATION

(CONTINUED ON PAGES 2, 3, AND 4)

DO E-2 APPLIES.

[REDACTED]

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR V.W. LEHTONEN/BMG R4 BUYER

ATTENTION OF:

AUTHORIZED BY:

JOS. A. REESE, JR.

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP / DATE	FROM

9/6/63
Accepted with changes

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Page 2

Metals and Controls, Inc.
Post Office Box 898
Attleboro, Massachusetts

CHANGE NOTICE 174

3. Order Attachment 3, List of Spare Components [REDACTED] is changed as follows:

- a. The quantity of Item V, [REDACTED] and all referenced drawings and specifications, is changed from 1 to 2.
- b. The quantity of Item W, Control Rod Spring Seat Assembly per drawing 935C051 Group 1, and all referenced drawings and specifications, is changed from 2 to 3.
- c. The quantity of Item X, Spring per drawing 935C083, Piece 1, and all referenced drawings and specifications, is changed from 2 to 3.

4. Refer to Order Attachment #5, and note the following quantity changes:

<u>Item</u>	<u>Specification</u>	<u>Suggested Use</u>
1.6	[REDACTED]	Control Rod per this Change Notice
	[REDACTED]	Control Rod per this Change Notice

5. Refer to Order Attachment #5, and add the following under item 1.6:

<u>Item</u>	<u>Specification</u>	<u>Suggested Use</u>
1.6.1	[REDACTED]	Control Rod per this Change Notice

6. [REDACTED]

7. The following is added as paragraph (n), Article 27, Attachment 1, General Provisions of the order:

[REDACTED]

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MFT

Page 3

Merals & Controls, Inc.
100 S. Main St.
Attleboro, Mass.

CHANGE NOTICE NO. 171

(n) Zirconium Sponge

- (1) Westinghouse will furnish zirconium sponge as listed in Section 1.5.2 of Attachment 5, at no cost to Seller, FOB Carrier, Seller's Plant, freight prepaid.
 - (2) Title to zirconium sponge furnished by Westinghouse shall remain in the Government, except that, upon delivery and acceptance of the core, title of all the residue of such material shall vest in Seller. All scrap generated from fabrication of such material becomes the property of Seller upon delivery and acceptance of the core, and shall be disposed of at his expense.
 - (3) In the event Seller requires additional zirconium sponge, upon Seller's request to Westinghouse, Westinghouse shall make available for purchase by Seller, at average inventory prices, additional sponge meeting the specifications of AT-(11-1)-389.
 - (4) After final acceptance by Seller, Seller shall be solely responsible for zirconium sponge furnished by Westinghouse or additional sponge made available for purchase by Seller and shall bear all risks for subsequent rejection. After final acceptance by Seller, Seller shall be solely responsible for such property; shall bear all risks for subsequent rejection whether or not due to unknown or latent defects; and Westinghouse shall not be obligated to replace defective or rejectable property nor be liable for loss by reason of plant shutdown, non-operation or increased expense of operation or any other consequential loss or damage.
8. The following is added as Section 1.5.2 of Attachment 5, Westinghouse Furnished Material:

<u>Type of</u> <u>Material</u>	<u>Quantity</u>	<u>Form</u>	<u>Specification</u>	<u>Suggested Use</u>
1.5.2 Zirconium Sponge	220 lbs.	Sponge	AT-(11-1)-389	Control Rods

[REDACTED]

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297900-MPT

Page 4

Metals & Controls, Inc.
P. O. Box 898
Attleboro, Mass.

CHANGE NOTICE NO.

9. The following is added to Attachment 9, Section A, Schedule of Westinghouse Furnished Material to Seller:

	<u>Reference</u>	<u>Piece or Item No.</u>	<u>Amount</u>	<u>Not Later Than</u>
[REDACTED]	Attach. 5	Item 1.6.A	1 pc.	8/26/63
Zirconium Sponge	Attach. 5	Item 1.5.2	220 lbs.	9/30/63

10. [REDACTED]

Westinghouse will supply up to an additional 67 feet and a future change notice will modify Attachment 5, Paragraph 1.6.1 accordingly.

11. Shipment of the control rod (drawing 918F477) will be made by September 30, 1963.

The control rod details (drawing 951D226) and scram spring (drawing 935C083, Piece 1) will be delivered to Westinghouse by December 15, 1963.

Shipping instructions for components covered by this change notice will be forwarded to Seller at a later date.

12. All other terms and conditions remain the same.

13. ADMINISTRATIVE NOTE: This change notice finalizes the scope of work previously identified as P-73.
- [REDACTED]

FROM Westinghouse Electric Corporation

DATE OF
CHANGE NOTICE

THIS CHANGE NOTICE APPLIES TO:

AT P.O. BOX 1468, PITTSBURGH 30, PA.

11/10/62

PURCHASE ORDER NO.

DATED

73-Y-297800-MPT 5/16/6

METALS AND CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR ~~NOTE~~).

CHANGE NOTICE NO. 22

AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

(CONTINUED ON PAGES 2 AND 3)

DO E2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

AUTHORIZED BY:

MARK FOR
ATTENTION OF: J.A. SPANGLER/MMP

L7

BUYER

WILL SHIP (DATE)

FROM

ACKNOWLEDGED & ACCEPTED BY

3/15/64

Attleboro, Mass

R. L. Churchill

11/21/62

(SIGNED FOR SUPPLIER)

DATE

Metals & Controls, Inc.

-2-

CHANGE NOTICE NO. 22

[REDACTED]

[REDACTED]

[REDACTED]

Westinghouse will furnish the following items at no cost to Seller, FOB Seller's Plant, freight prepaid for qualification work:

[REDACTED] H-1, H-2, or H-3 type

They may be mixed types. All will be [REDACTED] scrap, and all will contain natural uranium.

Seller's proposed qualification programs outlined in letter of October 9, 1962 are approved. [REDACTED]

[REDACTED]

No change in contractual delivery dates results from this change notice, but it is agreed that [REDACTED] Seller's element qualification process may omit the seal welding operation if the seal welding process is not qualified at the time these elements are ready for it. An equitable reduction in price shall be agreed upon in the event up to 20 qualification elements are not seal welded. The portion of this change for work on qualification elements is \$2,761 for 281 elements.

All production processing is based on an allowance of 16 elements per dry box as acceptable for criticality approval.

Refer to Order Attachment #1, Article 27 (k); the quantity of zirconium sponge is revised from 64,540 lbs. (per Change Notice No. 7) to 64,640 lbs.

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

CHANGE NOTICE

PURCHASE ORDER NO.

DATED

11/27/62

73-Y-297800-MPT

5/16/63

METALS AND CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR NONE).

CHANGE NOTICE NO. 24

THERE IS NO CHANGE IN THE PRICE OR DELIVERY OF THIS ORDER AS A RESULT OF THIS
CHANGE NOTICE

WESTINGHOUSE WILL FURNISH THE FOLLOWING SCRAP ELEMENT SECTIONS AND ELEMENT FOR
SELLER'S USE IN ESTABLISHING X-RAY ERROR. SHIPMENT WILL BE PREPAID, F.O.B.
SELLER'S PLANT. SELLER WILL DISPOSE OF RESIDUE AT NO COST TO WESTINGHOUSE.

1 POISON ELEMENT VH-7-14-26
6 SECTIONS OF NATURAL FUEL ELEMENT VH-7-14-26



ACKNOWLEDGMENT
FAILURE TO SIGN AND
WITHIN 10 DAYS AFTER
MAY BE CAUSE FOR
RECALL

DO E-2 APPLIES.

DEC - 4 1962

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

AUTHORIZED BY:

MARK FOR J.A. SPANGLER/MMP L7 BUYER
ATTENTION OF:

WILL SHIP / DATE
3/15/64

FROM

ATTLEBORO MASS

ACKNOWLEDGED & RECEIVED
(SIGNED FOR SUPPLIER)
K. L. Churchill 12/1/62

XXXXXXXXXXXX

WAPD-NAC-PUR-216

November 21, 1962

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P. O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. D. D. Blumenstein

Subject: Request For Approval of Attached Unnumbered
Change Notice to 73Y297300-MPT

Dear Sir:

Your approval is requested for issuance of the attached unnumbered change notice to Purchase Order 73Y297300-MPT. This change effects the supply of fuel and poison element samples to Metals and Controls for their use in establishing X-Ray error.

[REDACTED]

[REDACTED] sections to be furnished by Westinghouse are from the VQ run, and are deviated and excess to our needs. M & C has offered to return the balance of material remaining, but Westinghouse has no need or use for it.

No cost is involved, and Westinghouse considers the supply of these sample [REDACTED] Your immediate oral approval is requested to issue the attached unnumbered change notice.

Very truly yours,

A. Cavalcante, Jr.
A. Cavalcante, Jr., Supervisor
Naval Cores Procurement Department

JAS/jc

[REDACTED]

[REDACTED]

Attachments:

- #1 - Unnumbered change notice
- #2 - M & C letter, 10/19/62

cc: H. H. Hoffman
K. W. Schwanekamp
P. F. Dundon
J. C. Helbling
L. B. Prus
H. B. Hunter
H. M. Schadel
G. H. Cohen
R. E. Deutsch

A CORPORATE DIVISION OF TEXAS INSTRUMENTS INCORPORATED

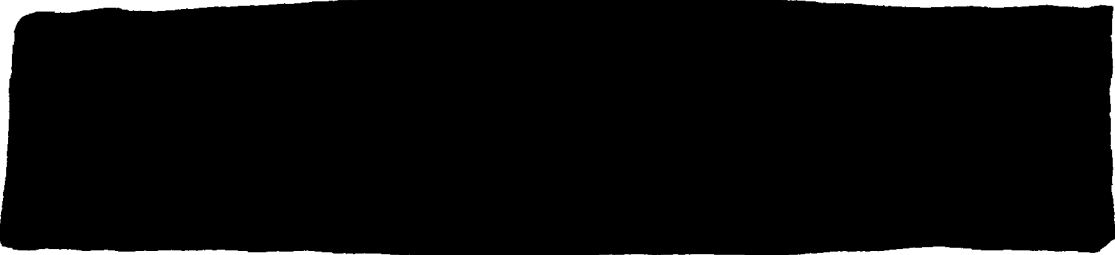
File: WAPD-203
October 19, 1962

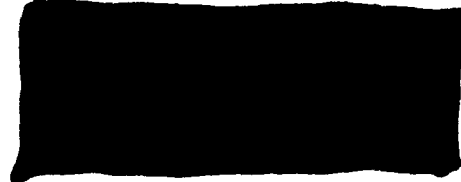
Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Attention: Mr. J. A. Spangler

Subject: X-ray Evaluation - P.O. 73-Y-297800-MPT

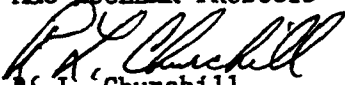
Gentlemen:


In view of the comments stated above, we request that you ship to M&C
for X-raying, polishing, and etching four each of the following speci-
mens for 


In the absence of the requested sections, we are willing to cut sections
 for the
X-ray qualification. Mr. J. Ayala is aware of what is required for
qualification purposes. Please contact the writer if there are any
problems in your supplying the required material.

Sincerely yours,

M&C NUCLEAR PRODUCTS


R. L. Churchill

Contract Administrator
Navy Nuclear Products

RLC/bs





FROM Westinghouse Electric Corporation

AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

1/21/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

DATED

73-Y-297800-MPT 5/16/63

METALS AND CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.

RECEIVED BY C. P. HOWLAND

JAN 24

BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR

CHANGE NOTICE NO. 34

CONFIRMING VERBAL TO R.L. CHURCHILL ON 1/18/63.

1. REFER TO ATTACHMENT #5, SECTION 1.0, LIST OF SUPPLIED MATERIAL. CHANGE
THE QUANTITY OF ITEM 1.1.1 [REDACTED]

2. [REDACTED]

3. SELLER SHALL FURNISH WESTINGHOUSE WITH A FULL AND COMPLETE REPORT OF THE
RESULTS OF THIS DEVELOPMENT PROGRAM

4. THERE IS NO CHANGE IN THE PRICE OR DELIVERY OR ANY OTHER PROVISIONS OF
THIS PURCHASE ORDER AS A RESULT OF THIS CHANGE NOTICE.

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR
ATTENTION OF:

J.A. SPANGLER/MMP

L7

BUYER

AUTHORIZED BY

PURCHASING AGENT

WILL SHIP (DATE)

FROM

ACKNOWLEDGED BY

DATE

DATE

ATTACHMENT TO 73-Y-297800-MPT
CHANGE NOTICE

Westinghouse will supply at no charge to Metals & Controls, 1.0-kg of natural

[REDACTED]

This material for development use only and does not require certification to the applicable specification. Available data will be transmitted to Metals & Controls for information.

RHLascheid/NCEngineering/1-10-63

/le

*Above changes per R H Lascheid
telecom of 1/15.*

[REDACTED]

[REDACTED]

[REDACTED]



FROM: BETTIS ATOMIC POWER LABORATORY
P.O. BOX 1468, PITTSBURGH 30, PA.

REFER TO
WAPD- NAC-PUR-250

DATE
1/16/63

P.O. OR INQ. NO.
73-Y-297800-MPT

TO: ☒ MANAGER-PNROO
☐ BSTR-BETTIS LABORATORY
USAEC
P.O. BOX 1105 PITTSBURGH 30, PA.

CC: CUSTOMER TECH. (ATTACH)
CUSTOMER PROJECT
PROJECT MGR.
ENGR. OR REQ'R.
PUR. & STORES MGR.
OTHERS

H. H. Hoffman
F. W. Warrick
K. W. Schwankamp
R. H. Lascheid
P. F. Dundon
B. G. Rieck

L. B. Prus
H. B. Hunter
F. G. Stengel
F. L. Shubert
F. W. Hassett
R. M. Matyas

TTN: D. D. Blumenstein

OUR APPROVAL IS REQUESTED FOR THE FOLLOWING PURCHASING ACTION: ☐ P.O. ☒ C/N

☐ INQ.

DESCRIPTION:

Supply of one additional kilogram of natural

REQ. DEPT.

NA C Engineering

PRIME CONTRACT NO.

CHG. NO.

AT 11-1-GEN-14

303C067E01

END USE

DWG/SPEC. NO.

PUR. ORDER OR INQ. IF NEGOTIATING THIS PURCHASING ACTION, QUOTATIONS WILL BE OR WERE OBTAINED FROM THE FOLLOWING SUPPLIERS

SUPPLIER	PRICE	DELIVERY

ELECTED SUPPLIER:

TOTAL PRICE:

CHANGE NOTICE	PREVIOUS AMOUNT OF THIS ORDER	CHANGE IN AMOUNT BY THIS C/N INCREASE - DECREASE No Change	NEW TOTAL PRICE
---------------	-------------------------------	---	-----------------

EXPLANATION: [REDACTED]

(A) VERBAL APPROVAL: ☐ (GRANTED)/ ☐ (REQUESTED) ON _____
(B) TECH. APPROVAL: ☐ GRANTED PER _____ ☒ NOT REQUIRED.
☐ REQUESTED ON _____
IF TECHNICAL APPROVAL HAS NOT BEEN GRANTED, APPROVAL OF THIS PURCHASE DOES NOT CONSTITUTE APPROVAL OF DESIGN.
(C) TECH. & ADM. EXCEPTIONS ☐ RESOLVED ☐ NOT RESOLVED ☐ NONE

ATTACHMENTS:

1. Unnumbered C/N
2. M&C TWX

BUYER

J. A. Spangler

PURCHASING AGENT

J. K. Heeke, Jr.

VICE PRESIDENT & GENERAL MANAGER

TS OF APPROVING AGENCY

SIGNATURE

D. D. Blumenstein

DATE APPROVED

1/18/63

Your approval is requested to furnish an additional kilogram of natural fuel [REDACTED]

[REDACTED] however, the successful use of this method depends on manual skill and dexterity, and it is doubtful that such a method is the long range answer to fuel manufacture. In addition, the present method requires [REDACTED]

[REDACTED] This is an unique technique not being pursued elsewhere in the industry at the present time. Bettis performed some preliminary work in this area but set it aside in favor of other approaches further along in development. The limited work done by Bettis with this technique gave evidence that it has definite potential and should be pursued further. Two characteristics of the technique which make it much more desirable than present techniques are [REDACTED]

After investigating the possibilities of this gravitational method, M&C has proposed (Attachment #2) to conduct an experimental program for the purpose of developing this technique as an alternate to the present manual methods. M&C has designed and built the equipment and outlined the program necessary for this experimental work. They propose making [REDACTED] in this program and have requested Westinghouse to furnish 1.0 kilogram [REDACTED] at no charge to M&C. All other developmental costs will be borne by M&C. The cost to Westinghouse and the Government would be about \$1,478 for one kilogram [REDACTED] plus transportation costs.

Westinghouse strongly recommends that M&C be furnished the fuel [REDACTED]. The potential return will far exceed the small cost [REDACTED]. If this experimental work results in a successful program, Bettis would consider using it here in our fuel manufacturing shops, and, without doubt, it would be looked at closely by others in the industry.

If this action is approved, Westinghouse intends to issue a change notice (Attachment #1), to provide M&C with one kilogram [REDACTED] which is now available at Bettis. Your immediate approval is requested since M&C now has men and equipment available. On February 1, most of the equipment and men will be devoted to preproduction work.

[REDACTED]



FROM **Westinghouse Electric Corporation**
 AT **P.O. BOX 1468, PITTSBURGH 30, PA.**

DATE OF
CHANGE NOTICE

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

DATE

73-Y-297800-NPT 5/16/62

TO **METALS AND CONTROLS, INC.**
P.O. BOX 898
ATTLEBORO, MASS.

BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE, YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR

INTERNAL NOTES:
NR APPROVAL NOT REQUIRED
WAPD-NAC-PUR-250

CHANGE NOTICE NO.

1. REFER TO ATTACHMENT #5, SECTION 1.0, LIST OF SUPPLIED MATERIAL. CHANGE THE QUANTITY OF ITEM 1.1.1 [REDACTED]
2. [REDACTED]
3. SELLER SHALL FURNISH WESTINGHOUSE WITH A FULL AND COMPLETE REPORT OF THE RESULTS OF THIS DEVELOPMENT PROGRAM.
4. THERE IS NO CHANGE IN THE PRICE OR DELIVERY OR IN ANY OTHER PROVISIONS OF THIS PURCHASE ORDER AS A RESULT OF THIS CHANGE NOTICE.



DO E-2 APPLIES.

1/8/63 Approved David A. Haneaster

FAILURE TO SIGN AND RETURN THE ATTACHED ACKNOWLEDGMENT WITHIN TEN DAYS AFTER DATE OF CHANGE NOTICE MAY BE CAUSE FOR CANCELLATION.

MARK FOR ATTENTION OF:

AUTHORIZED BY:

J.A. SPANGLER/1002 17 BUYER

for **JOS. A. HEEKE, JR.** PURCHASING AGENT

MODIFIED BY 4807L

R.H. LASCHIED - NA.C.

ACC OR NAVY CONTRACT NO.

AT-11-1-GEN-14

BUDGET NO.

642

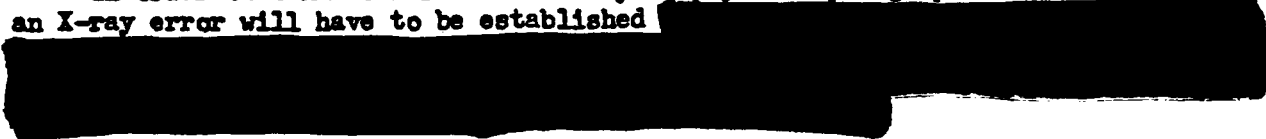
COMM. CODE

FLC

FUNDING NO.	CHARGE NO.	CURRENT FY + (INCREASE) - (DECREASE)	FUTURE FY + (INCREASE) - (DECREASE)	PREVIOUS AMOUNT BY CHARGE NO.	CURRENT AMOUNT BY CHARGE NO.
	303C067E01				
TOTAL					

Reference: (1) M&C letter WAFD-203, October 19, 1962, to J. J. Spangler
(2) 307A #16941

In order that M&C can satisfactorily comply with paragraph 4.4.1.6 of NR-5,
an X-ray error will have to be established



JCHelbling/eg

November 8, 1962

cc: J. AYALA
H.B. HUNTER
R.L. MATCHETT
C.R. SLAUGHTER
F.G. STENGEL
W.E. ZUPON



FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

4/10/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

DATED

73-Y-297800-MPT

5/16/63

METALS AND CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASSACHUSETTS
ATTN: MR. R. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR

*See Attached Letter
#42*

CHANGE NOTICE NO. 65

1. AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS
FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

[REDACTED]

(CONTINUED ON PAGE 2)

ACKNOWLEDGMENT
TURN THIS ACKNOWLEDGMENT
DATE OF CHANGE NOTICE
FOR CANCELLATION

M&C NUCLEAR

APR 18 1963

[REDACTED]

[REDACTED]

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR W. LEHTONEN/MMP
ATTENTION OF:

R4

BUYER

AUTHORIZED BY:

[Signature]

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)	FROM	ACKNOWLEDGED & ACCEPTED BY
<i>[Signature]</i>		<i>[Signature]</i> 4/25/63
		SIGNED FOR SUPPLIER

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
This is Part of Purchase Order 73-Y-297800-MPT
Change Notice No.
Page 2

2. Reference Purchase Order Attachment No. 4, Part III, Paragraph 1 and 3.

A. Change the revision dates and designation of NR 5, as listed below:

<u>New Rev. Date</u>	<u>Specification or Standard Title</u>	<u>New Number</u>	<u>Old Number</u>
Oct. 25, 1962	Fuel Assemblies 2	L-500	NR-5
Oct. 25, 1962	[REDACTED]	[REDACTED]	[REDACTED]
Oct. 25, 1962	[REDACTED]	[REDACTED]	[REDACTED]
Dec. 14, 1962	Internal Defects	L-500 Std.C	NR-5C
Oct. 25, 1962	Reaction Zones	L-500 Std.D	NR-5D
Oct. 25, 1962	[REDACTED]	[REDACTED]	[REDACTED]
Oct. 25, 1962	Fuel Requirements	L-500 Std.F	NR-5F

B. Add to Purchase Order Attachment No. 4, Part III, Paragraph 3, the following:

[REDACTED]

3. All other references to NR-5 and NR-5 Standards A through F found in other attachments to this purchase order, and on all Approval Requests (AR's, form 73649) and Request for Engineering Changes (REC's, form 73650) submitted to date, are hereby changed to the corresponding L-500 and L-500 Standards A through F. All references in the order to NR-5 Standards A through F in their entirety are hereby changed to L-500 Standards A through G.
4. MEC is to submit an Approval Request (AR) covering the use [REDACTED] identified in Paragraphs 3.2.3.1 (b) and 4.1.2 of L-500 Standard G.
5. There is no change in the delivery date of this order as the result of this change notice. All other terms and conditions remain the same.
6. Administrative Note: This Change Notice finalises the scope of work previously identified as proposed changes P-30 and P-30-1.
- [REDACTED]

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

4/29/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

73-Y-297800

DATED

5/16/62

METALS & CONTROLS, INC. M&C NUCLEAR
P.O. BOX 898
ATTLEBORO, MASS.

MAY - 2 1963

BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE, YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR MR. TECHNICAL APPROVAL NOT REQUIRED.

CHANGE NOTICE NO. 83

1. THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS THE RESULT OF THIS CHANGE NOTICE.
2. AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

3. PERFORM THE RADIOGRAPHY OF [REDACTED] SUPPLIED BY WESTINGHOUSE. THE APPROXIMATE BREAKDOWN RADIOGRAPHED ARE AS FOLLOWS:

4. ADMINISTRATIVE NOTE: THIS CHANGE NOTICE FINALIZES THE SCOPE OF WORK PREVIOUSLY IDENTIFIED AS A [REDACTED] AFTER FORCE CAN

I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR Westinghouse Electric Corporation, Purchasing Department

MARK FOR V.W. LEHTONEN/BMG

R4

BUYER

AUTHORIZED BY:

PURCHASING AGENT

WILL SHIP (DATE)

FROM

JOS. A. [REDACTED]

RECEIVED & APPROVED BY

[REDACTED] (SIGNED FOR SUPPLIER)

7/5/63 DATE



WAPD-NAC-PA-2962

From BAPL - SMR Bldg.

Date April 15, 1963

Subject Engineering Estimate

Reference: P-103 [REDACTED]
Radiography of Bettis
[REDACTED]

BETTIS ATOMIC POWER LABORATORY
G Building

Mr. G. P. Stevenson
Planning and Control
Naval Cores Department

cc: J. C. Halbling
H. B. Hunter

You are requested to prepare and submit an Engineering estimate for the following:

Perform the radiography of approximately [REDACTED]
[REDACTED] supplied by Westinghouse.

Since M&C Nuclear has already been contracted to perform the layout on Westinghouse supplied radiographs, the only charges involved will be those associated with the radiography and developing of the films. It will not be necessary to use double film technique.

This change is necessary to relieve the backlog of radiography that accumulated while awaiting the delivery of the Bettis X-ray fixture.

The approximate breakdown [REDACTED] radiographed are as follows:



V. W. Lehtonen

V. W. Lehtonen, Buyer
Naval Cores Procurement Department

/bcw

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

5/14/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

DATE

73-Y-297800-MPT

5/16/63

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: MR. R. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR *See Attached Letter*)

NR TECHNICAL APPROVAL RD:
NR: GTMA GEE 1#10,596

CONFIRMING TELEGRAM 00 5/13/63. CHANGE NOTICE NO. 93

1. THERE IS NO CHANGE IN THE ORDER PRICE OR DELIVERY AS THE RESULT OF THIS CHANGE NOTICE.

- 1) POLYETHYLENE BOTTLES AS SPECIFIED IN SECTION 5.1 OF NAVAL REACTORS SPECIFICATION #8, OR
- 2) DEEP DRAWN, SEAMLESS, TINPLATE CONTAINERS, WITH SCREW TOP LID AND BUNA-N RUBBER GASKET.

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR V.W. LEHTONEN/BMG
ATTENTION OF:

R4

BUYER

AUTHORIZED BY:

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)	FROM	SIGNED FOR SUPPLIER	DATE
		<i>R. L. Churchill</i>	5/15/63



Westinghouse Electric Corporation

Bettis Atomic Power Laboratory

Pittsburgh, Pennsylvania

WAPD-NAC-PUR-318-D

May 13, 1963

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P. O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. D. D. Blumenstein

Dear Sir:

Purchase Order 73-Y-297400-MPT
Addendum No. D to Letter WAPD-NAC-PUR-318
Dated April 10, 1963

Submitted herewith, as Attachment #1, is a revision of the proposed change notice submitted as Attachment #1 to WAPD-NAC-PUR-318-C, dated May 3, 1963. This revision, and the following and attached information clarify and resolve the following points, which were the subject of a meeting held in your office on May 6, 1963.

1. NAC has submitted a certification (Attachment #2) as to currentness, completeness and accuracy of the cost information presented in their proposal of April 22, 1963.
2. Paragraph 7, on Page 2 of Attachment #1 hereto, has been corrected by deleting the word "Paragraph", and substituting in lieu thereof the word, "Article".
3. Paragraph 9 (1) 2, on Page 3 of Attachment #1 hereto, has been revised in accordance with the comments received from the Commission.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

4. Paragraph 9 (L) 4, on Page 3 of Attachment #1 hereto, has been revised to include the same terms as in Article 27 (e)(6), wherein M&C assumes complete responsibility for the material after final acceptance.
5. [REDACTED]
6. Paragraph 10-L, on Page 5 of Attachment #1 hereto, has been amended so that Westinghouse's responsibility is limited to replacement of material. Westinghouse will not be assessed any additional labor costs M&C might incur as the result of rejected "end pieces".
7. Paragraph 13 has been added to Page 5 of Attachment #1 hereto. This paragraph changes the "Suggest Use" found on Page 1, Order Attachment #5, Paragraph 1.1 and 1.2 to read: [REDACTED] fuel elements except those supplied by Westinghouse".
8. M&C's April 22, 1963 proposal is compared with the Westinghouse estimate in Attachment #3 hereto. The M&C preproduction labor cost, as presented in Attachment #3, is \$11,095 greater than the Westinghouse estimate due to differences in inspection and engineering labor. These variances were discussed in detail by our engineering estimator and Resident Engineer at M&C. They concluded our estimate had overlooked certain preproduction inspection and engineering labor requirements. These have been estimated (Attachment #4) with the resultant increase of \$18,736.00 in the Westinghouse cost estimate (Attachment #5).

The estimated total cost of preproduction labor is now \$37,766.00, as compared with M&C's price of \$30,884.00. The Westinghouse estimate of preproduction procurement costs is increased by \$756.00 resulting in a new total procurement estimate of \$118,786.00, as compared with M&C's price of \$116,288.00. The total Westinghouse cost estimate is increased by \$18,736.00, from \$324,994.00 to \$343,730.00, which compares to M&C's total price of \$254,777.00.

The total material requirements identified by M&C compare very favorably with the Westinghouse estimate. The Westinghouse material requirements estimate, as stated on Page 3 of Attachment #3, is increased in only small quantities by the supplemented Engineering estimate (Attachment #4).

[REDACTED]

9. The Westinghouse decision to negotiate a change notice to our existing core order with M&C on a sole-source basis, rather than to solicit competitive bids from the three other potential suppliers of [REDACTED] was based on the following:
- A. A review of Babcock & Wilcox Company's schedule concluded they were unable to manufacture more elements [REDACTED] than they are presently contracted to produce. Therefore, B&W is not in a position to manufacture [REDACTED] with the delivery schedule requirements.
 - B. Westinghouse Atomic Fuel Department is loaded to capacity, manufacturing the full complement of elements [REDACTED]. In our judgment they could not undertake the production [REDACTED] and meet the delivery schedule requirements.
 - C. It is the opinion of Westinghouse that United Nuclear Corporation (UNC) could not be in a position to start manufacture of production elements until 4-1/2 months after order placement; production would take another three months. UNC requires major modifications to their facility to conform with the reference Westinghouse processes and an extensive development and qualification program because of their lack of experience with Westinghouse designed fuel components. [REDACTED]
[REDACTED] Based on the earliest contract placement date of April 1, 1963, UNC would not be in a position to start manufacture in time to meet M&C requirements.
10. The \$15,000.00 reduction in tooling and equipment costs, from M&C's original proposal to their revised proposal, represents:
- A. the deletion of certain items
 - B. change in quantities of other items
- [REDACTED]

- C. a pro-rata reduction in the cost of those items of equipment and tooling which are not categorized as special tooling. This pro-rata reduction is based on the anticipated usefulness of the equipment and tooling after the work on this order is complete.

The rearrangement of equipment and warehouse storage facility does not constitute a capital expenditure in M&C's facilities. This is confirmed in M&C's telegram (Attachment #6). Westinghouse has established that all the equipment and tooling listed in M&C's revised quote is necessary to perform the scope of work under the proposed change notice.

In PUR-318-C, it was stated that M&C's proposal did not include costs for destructive evaluation per Specification L-500 Standard A. This has been confirmed by the vendor (Attachment #7).

Based on the oral approval granted by your office on May 3, 1963, Westinghouse issued Change Notice No. 89 (Attachment #8), extending the term of Change Notice No. 67 through May 8, 1963.

Funding approval for this action was granted on letter RD:NR:JCKeister I-#11,849, dated May 8, 1963.

Based on the above and attached information, and the information presented in previous correspondence, your approval is requested to issue the revised proposed change notice presented as Attachment #1 hereto.

Very truly yours,

Jos. A. Beeke, Jr.,
Purchasing Agent
Naval Cores Department

VWL/lft

Attachments:

- #1 - Revised Proposed Change Notice
- ~~#2~~ - M&C Telegram dated May 8, 1963
- #3 - Comparison of M&C's April 8, 1963
- ~~#4~~ - Supplemental Westinghouse Engineering Estimate
- ~~#5~~ - Supplemental Westinghouse Cost Estimate
- #6 - M&C Telegram dated May 8, 1963
- ~~#7~~ - M&C Telegram dated May 3, 1963
- #8 - Change Notice No. 89 *in 1154/6*

cc: A. R. Sabol
H. H. Hoffman
K. W. Schwankamp
E. T. Cox
P. F. Dundon
L. B. Prus
J. A. Heeke, Jr.
F. W. Hassett
H. M. Schadel, Jr.
J. C. Helbling
H. B. Hunter

Comments of U. S. Atomic Energy Commission:

Subject: Withdrawing certification from M&E as to 64003

For use in original quote

[Signature]
Authorized Representative 0

MAY 17 1968
Date

WAPD-MAC-PUR-318-C

May 3, 1963

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P. O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. D. D. Blumenstein

Dear Sir:

Purchase Order 73-Y-297800-MFT
Addendum No. C to Letter WAPD-MAC-PUR-318
Dated April 10, 1963

Your approval is requested to issue the attached proposed change notice (Attachment #1) to Metals & Controls, Inc. (M&C), under Purchase Order 73-Y-297800-MFT, authorizing the fabrication of type elements for a total fixed price of \$254,777.00, \$25,000.00 of which was released by Change Notice No. 67.

Historical Information

An evaluation of Bettis production schedules versus vendor requirements for Westinghouse-furnished fuel elements identified an incompatibility that could be resolved, type elements. Prior to this evaluation Westinghouse was furnishing all B-3 type elements to M&C per the provisions of the purchase order.

During a meeting at M&C on March 26, 1963, it was ascertained that M&C could produce

Subsequently, the vendor submitted a proposal, which we presented as Attachment #2 to letter WAPD-MAC-PUR-318, dated April 10, 1963. PUR-318 was approved, and Change Notice No. 67 was issued releasing a maximum of \$25,000.00 and permitting the vendor to proceed on this effort through April 19, 1963.

Negotiations were pursued with MAC during the period of April 15th through the 19th. A one week extension was granted to MAC by Change Notice No. 73, based on the oral approval of your office on April 19, 1963, as confirmed by letter WAPD-MAC-FUR-318-A, dated April 22, 1963. MAC's revised proposal was expected early the week of April 22, 1963; however, it was not received until Friday, April 26, 1963. Under these circumstances approval of another one week extension was requested and granted by letter WAPD-MAC-FUR-318-B, dated April 26, 1963. Change Notice No. 84 was issued, extending the term through May 3, 1963.

Price Discussion

MAC originally proposed a price of \$346,976.00, [REDACTED] elements. That price included \$48,300.00 for equipment and tooling and \$119,943.00 for procurement of Zircaloy sponge, fabricating it into components, and procuring other outside services. During negotiations, MAC agreed to use [REDACTED] Westinghouse procured for its own use in manufacturing these elements. They also revised their labor costs, eliminated some equipment and tooling, and reduced the quantities and prices of other equipment and tooling.

The total amount of MAC's revised proposal (Attachment #2) was \$254,949.00; however, Westinghouse determined that the extensions made by MAC in arriving at this total were not precise and requested MAC to recalculate. The new total corrected amount is \$254,777.00. This latter figure includes \$33,300.00 for equipment and tooling and \$55,940.00 for outside services.

In summary, MAC reduced the equipment and tooling by \$15,000.00; eliminated the procurement of Zircaloy sponge and reduced the price of outside services by \$64,003.00; and increased labor costs by \$6,809.00. The increase in labor costs was accepted by Westinghouse as fair and reasonable compensation for the additional work required at MAC as a result of the revised MAC exceptions and assumptions requested by Westinghouse. All exceptions and assumptions (as revised by MAC) are acceptable to Westinghouse and represent no compromise in the quality of the product. This amounts to a net total reduction of \$72,194.00 in direct costs (\$92,199.00 as marked up) in their original quotation.

The initial Westinghouse Engineering estimate (Attachment #3), which covered the preproduction and production requirements, was extended to a total cost estimate of \$416,336.00 (Attachment #5, pages 1 and 2). Subsequently, the Engineering estimate was amended (Attachment #4) to include the dummy element effort, which is a requirement under the order, [REDACTED] be supplied from Westinghouse inventory. Our estimate for the dummy element effort (Attachment #5, page 3) is \$12,382.00. [REDACTED] instead of requiring MAC to buy sponge and convert it, results in a reduction of \$97,596.00 in the Westinghouse estimate. The revised total cost estimate is \$331,122.00, as compared with MAC's price of \$254,777.00. Neither MAC's proposal nor the Westinghouse estimate includes costs for destructive evaluation per Specification L-500 Standard A. MAC's proposal is not explicit on this point, but they have stated this is true, and will confirm it.

[REDACTED]

The increased amounts [REDACTED] to be provided MAC for the manufacture [REDACTED] have been judged by Westinghouse to be reasonable.

Funds for this action are available in Charge Number 1160067301. NR technical approval has been requested in letter WAFD-MAC(CC)-785, dated May 1, 1963.

Westinghouse is of the opinion that this is a very reasonable price and that it is in the best interests of the Government and Westinghouse to issue the attached proposed change notice. Based on the above and attached information, as well as that presented in PUR-318 and its attachments, your early approval is requested.

Very truly yours,

APPROVED BY:

[Signature]
Philip H. Ross,
Vice President & General Manager

[Signature]
Joe. A. Beeks, Jr., Purchasing Agent
Naval Cores Department

Attachments:

- #1 - Proposed Change Notice
- #2 - MAC's Revised Proposal dated April 22, 1963
- #3 - Westinghouse Engineering Estimate, dated April 5, 1963
- #4 - Westinghouse Engineering Estimate, dated April 19, 1963
- #5 - Westinghouse Cost Estimate
- #6 - Change Notice Summary Sheet

cc: A. R. Schol
H. H. Hoffman
K. W. Schmeckamp
E. T. Cox
P. F. Dunion
H. B. Hunter

L. B. Frus
J. A. Beeks, Jr.
F. W. Bassett
H. M. Schadel, Jr.
J. C. Halbling

.....
Comments of U. S. Atomic Energy Commission:

Authorized Representative

Date

[REDACTED]

FROM **Westinghouse Electric Corporation**AT **P.O. BOX 1458, PITTSBURGH 30, PA.**DATE OF
CHANGE NOTICE

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

DATED

73-Y-297800-MPT 5/16/62

TO

**METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: MR. R. CHURCHILL**

BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR **WAPD-NAC-PUR-318-C;**

NR TECHNICAL APPROVAL**REQUESTED IN WAPD-NAC (CC)785**

CHANGE NOTICE NO.

1. THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS THE RESULT OF THIS CHANGE NOTICE.
2. AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----	\$		MAX.
INCREASE PER THIS CHANGE NOTICE -----		229,777.00	
NEW PURCHASE ORDER TOTAL -----	\$		MAX.

3. THE SCOPE OF WORK COVERED BY THIS CHANGE NOTICE IS AS PROVIDED BY PARAGRAPH NO. 3 OF CHANGE NOTICE NO. 67, AND AS PROVIDED HEREIN.

DD E-2 APPLIES.

MARK FOR ATTENTION OF:

V. W. LEHTONEN/BMG R4 BUYER

AUTHORIZED BY:

JOS. A. HEEKE, JR.

PURCHASING AGENT

ORIGINATED BY & DEPT.		AEC OR NAVY CONTRACT NO.		BUDGET NO.	COMAL CODE
V. W. LEHTONEN		NA.C.		AT-11-1-GEN-14	642
FUNDING NO.	CHARGE NO.	CURRENT FY + (INCREASE) - (DECREASE)	FUTURE FY + (INCREASE) - (DECREASE)	PREVIOUS AMOUNT BY CHARGE NO.	CURRENT AMOUNT BY CHARGE NO.
	116C057B01		1 229,777.00		
	117C057B01				
	1276 C				
	115C024E01				
	303C067E01				
TOTAL					

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Metals & Controls, Inc.
Attleboro, Mass.

CHANGE NOTICE NO.

4. This change notice firm prices Change Notice No. 67 at a total price of \$254,777.00, \$25,000.00 of which was previously incorporated by Change Notice No. 67 with termination date of April 19, 1963. This date was extended to April 26, 1963 and May 3, 1963, by Change Notice No. 73 and Change Notice No. 84 respectively.

5. Refer to Order Attachment No. 5 and make the following quantity changes:

Item

1.1

1.2

6. The following is added as section 1.5 of Order Attachment 5, "List of Government Material, Components, and Equipment to be supplied by Westinghouse".

Quantity

130 Pcs.

456 Pcs.

7. Refer to Order Attachment No. 1 Paragraph 27 (f) (1) and make the following quantity change:

Element Type

Drawing No.

From

To

949D039, Item 3

8. Refer to Order Attachment No. 9A and make the following quantity and delivery changes:

Material

Reference

Pc. or Item No.

Amount

Not Later Than

Attachment 1,
Article 27 (f)(1)

949D039, Item 3

856 Pcs. 8/17/63

Attachment 5

Item 1.5

586 Pcs. 90%: 5/10/63
10%: 6/1/63

9. The following is added as paragraph (L), Article 27, of Attachment 1, General Provisions, to the order.

(L)

(1) [REDACTED] as listed in section 1.5 of Attachment No. 5, at no cost to Seller, FOB Carrier, Seller's Plant, freight prepaid.

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Metals & Controls, Inc.
Attleboro, Mass.

CHANGE NOTICE NO.

(2) [REDACTED] upon Seller's request to Westinghouse, the Commission will allocate sponge per the terms of paragraph (K)(5) of this article.

(3) Title to [REDACTED] shall remain in the Government, except that, upon delivery and acceptance of the core, title to all the residue of such material shall vest in Seller. All scrap generated from fabrication of such material becomes the property of Seller upon delivery and acceptance of the core, and shall be disposed of at his expense.

(4) After final acceptance by Seller, Seller shall be solely responsible for such property and shall bear all risks for subsequent rejection, provided however, that prior to final acceptance by Westinghouse of the item to be delivered under this order, if Seller can show to the satisfaction of Westinghouse that a latent defect was in the material as supplied by Westinghouse, Westinghouse will replace the material at no cost to Seller to the original specification.

10. The following comments apply to this change notice:

A. The development and preproduction requirements will be combined into one program, since the H-3 elements are basically the same as Types P-1 and C-1 being fabricated at M&C. The preproduction program will consist of fabricating 20 dummy and 40 enriched [REDACTED] elements. Bettis is not obligated to pay [REDACTED]

B. Bettis agrees the following equipment can be used interchangeably [REDACTED] provided M&C shall meet all the other requirements of the order.

[REDACTED]

(2) Fuel weighing scales and handling equipment [REDACTED]

[REDACTED]

[REDACTED] X-ray Room).

(5) Spot welding equipment.

(6) Heli-arc weldingchill and related equipment.

(7) Evacuation.

[REDACTED]

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 73-Y-297800-MPT

Metals & Controls, Inc.
Attleboro, Mass.

CHANGE NOTICE NO.

(8) [REDACTED]

- C. Cleaning of equipment will be performed [REDACTED] in a manner similar to that used by M&C when changing from the handling of enriched to natural uranium. It is noted that "back-cleaning" is not required, [REDACTED]. The cleaning procedure will be submitted for approval.
- D. Controls presently being used at REC [REDACTED] will be used without change for the H-3's. The H-3 control procedure will be submitted for approval.
- E. M&C will follow processes for H-3 plates identical to those used for other plate types (P1 and P2) provided M&C shall meet all the other requirements of the order. Such processes will be approved and the submittal will include critical dimensions.
- F. Insulated or bomb type pipe nipples will be acceptable for outer storage containers.
- G. Release for production will be based on presentation at M&C of qualification data to BAPL representatives with a formal Preproduction Report to follow at a later date. Qualification will be based on evaluation of attributes, confidence statements, and physical dimensions of at least 10 preproduction elements.
- H. Taper requirements will meet requirements of the contract as amended by approved REC's.
- I. [REDACTED]
- J. [REDACTED]
- K. [REDACTED]
- [REDACTED]

10. The wrought product Zircaloy supplied by Bettis will meet contract specification requirements or approved deviations thereof. [REDACTED] sizes provided by Bettis are of sufficient size to yield 125 component size requirements with the exception of end pieces. In this case, there will be less material available for "clean-up" of the component than is normally provided for by NEC. Should end piece components be rejected for this reason, NEC is to be provided an additional equivalent amount [REDACTED]
11. The total price of this change notice does not contain monies for destructive evaluation to specification B-500 Standard A.
12. Items No. 7 and 8 above reiterate the changes previously identified in Paragraph No. 4 of Change Notice No. 67.

A CORPORATE DIVISION OF **TEXAS INSTRUMENTS INCORPORATED**

File: WAPD-203
April 22, 1963

Mr. J. Heeke, Purchasing Agent
Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Subject: [REDACTED] P.O. 73-Y-297800-MPT

Reference: M&C Original Proposal Dated April 3, 1963

Dear Sir:

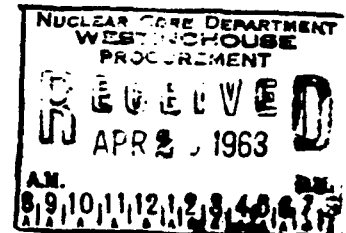
Pursuant to negotiations conducted with Bettis representatives in your office on April 18 and 19, 1963, our proposal for the supply of the subject elements is hereby revised. This revision reflects certain modifications to M&C's tooling and equipment costs, a reduction in selling price as the result of Bettis supplying the necessary Zircaloy wrought product, and other adjustments resulting from resolution of M&C technical exceptions and assumptions identified in the original quotation.

M&C will fabricate [REDACTED] to the point in process where we formerly commenced our processing for a fixed price of \$254,949.00. This price reflects our assuming responsibility for sectioning, inspection [REDACTED] material losses, etc., the same as for those other element types being fully fabricated at M&C.

Our price is based on the following assumptions and exceptions, some of which are revised from the original:

1. The development and preproduction requirements will be combined into one program, since the H-3 elements are basically the same as Types P-1 and C-1 being fabricated at M&C. The preproduction program will consist of fabricating 20 dummy and 40 enriched [REDACTED]
2. The following equipment can be used interchangeably with present M&C produced elements [REDACTED]

Fuel weighing scales and handling equipment [REDACTED]



April 22, 1963

[REDACTED] (X-ray Room).

- e. Spot welding equipment.
- f. Heli-arc weldingchill and related equipment.
- g. Evacuators.

- [REDACTED]
3. Cleaning of equipment will be performed [REDACTED] in a manner similar to that used by M&C when changing from the handling of enriched to natural uranium. It is noted that "back-cleaning" is not required, [REDACTED]. The cleaning procedure will be submitted for approval.
 4. Controls presently being used at M&C [REDACTED] will be used without change for the H-3's. The H-3 control procedure will be submitted for approval.
 5. M&C will follow processes [REDACTED]. Such processes will be approved and the submittal will include critical dimensions.
 6. Insulated or bomb type pipe nipples will be acceptable for outer storage containers.
 7. Release for production will be based on presentation at M&C of qualification data to BAPL representatives with a formal Preproduction Report to follow at a later date. Qualification will be based on evaluation of attributes, confidence statements, and physical dimensions of at least 10 preproduction elements.
 8. Taper requirements will meet requirements of the contract as amended by approved REC's.

9. [REDACTED]

10. [REDACTED]

April 22, 1963

The following materials are to be furnished by Bettis in time to support our element production:

In order to support the core shipment date, Bettis must supply [REDACTED] April 3, 1963 letter. M&C will complete [REDACTED] in accordance with the schedule defined in the April 3rd letter.

The cost and price breakdowns revised as a result of the April 18 and April 19 negotiations are as follows:

1. Cost Breakdown

Direct Labor Hours

<u>Phase</u>	<u>Mfg.</u>	<u>Q.C.</u>	<u>Engr.</u>	<u>Procurement Cost</u>
Preproduction	11925 540	2530 19,405	565 6554	\$ 2,010
Production	457, 47, 5010	6550 50, 391005	11658	87,230
Totals	5550	9080	1570	\$89,240

2. Price Breakdown

Mfg. Labor @ \$5.78/Hr.	-----	\$ 32,100
Q.C. Labor @ \$4.86/Hr.	-----	44,200
Engr. Labor @ \$7.35/Hr.	-----	11,550
Procurement Cost	-----	89,240
Product Cost	-----	\$177,090
D&AE - Labor @ 40.5%	-----	35,600
Material @ 16.0%	-----	14,290
Operating Cost	-----	\$226,980
Corporate G&A @ 1.1%	-----	2,497
Total Cost	-----	\$229,477
Profit	-----	25,472
Price	-----	\$254,949

Included in the above procurement cost are the following items of tooling and equipment, totaling \$33,300 as modified by our negotiations:

[REDACTED]

April 22, 1963

Item

1. [REDACTED] Modification for Trials
2. 2 Charge [REDACTED]
3. 4 Twin [REDACTED]
4. 10 X-ray Fixtures
5. [REDACTED] Instruments
6. Evacuation Chamber [REDACTED]
7. (1) 25-position Evacuator with Pumps, etc.
8. 1 Set Cast Iron [REDACTED] (% of Cost Based on Utilization)
9. 1 Element [REDACTED]
10. 2 Loading Hoppers
11. Non-insulated Inner Cans [REDACTED]
12. [REDACTED] Tools
13. Fuel Storage Racks
14. Pack Carts, Rubber Gloves and Miscellaneous
15. Rearrangement of Equipment and Warehouse Storage Facility to Provide Room for Expansion [REDACTED]

In accordance with oral discussions on April 18 and 19, it is agreed that [REDACTED] may be assembled [REDACTED] using M&C's normal cleaning practices between runs. No addition to the existing assembly room will therefore be required.

A condition of this proposal is that all applicable AR's, REC's, and assumptions and exceptions previously approved for the order will apply [REDACTED]

We understand that the wrought product Zircaloy to be supplied by Bettis will meet contract specification requirements or approved deviations thereof. [REDACTED] yield M&C component size requirements with the exception of end pieces. In this case, there will be less material available for "clean-up" of the component than is normally provided for by M&C. Should end piece components necessitate rejection for this reason, M&C is to be provided an additional equivalent amount [REDACTED] at no cost to M&C. Title to any scrap or unused material realized from the Bettis-supplied Zircaloy reverts to M&C.

In order to achieve the planned production schedule we require action timed as follows:

[REDACTED]

Mr. J. Heeke, Bettis

-5-

April 22, 1963

<u>Date</u>	<u>Nature</u>
April 26, 1963	Release to procure balance of tooling & support engineering effort.
May 1, 1963	Receive preproduction quantities of [REDACTED]
June 1, 1963	Receive production quantities of [REDACTED]

May we have your authorization to proceed?

Very truly yours,

GPH

George P. Howland
Manager, Navy Nuclear Products

GPH/bs

[REDACTED]

TO: MANAGER, PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
UNITED STATES ATOMIC ENERGY COMMISSION
POST OFFICE BOX 1105
PITTSBURGH 30, PA.

CONTRACT NO. AT(36-1)-104

CORE TYPE AND IDENTITY

All Items

ATTENTION:

FROM: METALS & CONTROLS INC.
P. O. Box 898
Attleboro, Massachusetts 02703

DATE OF INSPECTION October 11, 1963

DRAWING, SKETCH OR DATA ATTACHED

YES ☐ NO ☒

DRAWING NO. REVISION PIECE NO.

9923J101 3

SERIAL NO.

SPECIFICATION NO. REVISION NAME OF PART

Subassembly

WHAT CORRECTIVE ACTION HAS BEEN TAKEN TO PREVENT RECURRENCE OF ABOVE DEVIATION?

Welding procedures have been reviewed, close controls are maintained to minimize welding variability at seam ends and element spacer movement restrictions are minimized to reduce hot tears in end crops.

SIGNED:

K. Hammerschmidt K. Hammerschmidt 11-2-63

TITLE

Process Engineer

ACTUAL ITEM CONDITION OR DIMENSION

LIMIT OR STANDARDS APPLIED

A hot tear was found in each of the top end crops listed below:

NR-1 Paragraph 3.5.5

F/R 2/50

Both hot tears start at the weld tab end of the crop.

SIGNATURE AND DATE

RECOMMENDATION FOR:

COMMENTS

BETTIS APL

APPROVAL

DISAPPROVAL

DISPOSITION

APPROVAL

DISAPPROVAL

RECEIVED BY D. J. DAVIDSON

DEC 2 1963

PNR00

NO MCD: 104-105

DEVIATION NOTICE - DISPOSITION REQUEST
FORM PNR 6-6/59 REV. 1

(This Form to be completed by Typewriter)

TO: MANAGER, PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
UNITED STATES ATOMIC ENERGY COMMISSION
POST OFFICE BOX 1105
PITTSBURGH 30, PA.

CONTRACT NO.

AT(36-1)-104

CORE TYPE AND IDENTITY

All Items

ATTENTION:

FROM:

METALS & CONTROLS INC.
P. O. Box 898
Attleboro, Massachusetts 02703

DATE OF INSPECTION

October 8, 1963

DRAWING, SKETCH OR DATA ATTACHED

YES ☒ X-ray NO ☐

DRAWING NO.

922J512

REVISION

5

PIECE NO.

SERIAL NO.

104-38

SPECIFICATION NO.

NR-2

REVISION

C

NAME OF PART

WHAT CORRECTIVE ACTION HAS BEEN TAKEN TO PREVENT RECURRENCE OF ABOVE DEVIATION?

Improved cleanliness control being incorporated to alleviate this condition.

SIGNED:

W. Brogden

Process Engineer

ACTUAL ITEM CONDITION OR DIMENSION.

LIMIT OR STANDARDS APPLIED

High density area in butt weld -- This area caused by filler wire welding into a depression. This depression was caused by machining out voids in this area.

NR-2, Revision C

SEE ATTACHED X-RAY

F/R 1/57

SIGNATURE AND DATE

BETTY APL

RECOMMENDATION FOR:

APPROVAL

DISAPPROVAL

COMMENTS

RECEIVED BY D. J. DAVISON

OCT 30 1963

PNROO

DISPOSITION

APPROVAL

DISAPPROVAL

NO MCD:104-104

INSTRUCTIONS TO BIDDERS
DECEMBER 1, 1961

1. Government-Furnished Special Nuclear Material

The Commission will furnish to the Contractor, F.O.B. Contractor's Plant, enriched uranium in the quantities indicated by the Contractor as required for the fuel loading of [REDACTED] Cores and Spare Components for which a contract may be awarded. You should indicate in your proposal the quantities of enriched uranium required for one, two, three, four, five, and six cores and the spare components. It is desirable to maximize the use of uranium recycle material in the manufacture of Naval Reactor cores, and your proposal should identify the amount of recycle uranium on hand, or which you expect to have on hand, which you agree to recycle in the manufacture of [REDACTED] Cores and the Spare Components. Such quantities of recycle uranium are to be counted in the total quantity of uranium to be furnished at no cost. The quantity of enriched uranium required by the Contractor and the quantity of recycle uranium to be used by the Contractor will be considered, along with price and other factors, in evaluating the proposals.

Your attention is invited to the fact that for each gram of U-235 furnished to the Contractor by the Commission in excess of the quantity of uranium agreed to be furnished by the Commission without cost to the Contractor, a charge of \$0.50 will be made to the Contractor, as provided for under Article 45, Government-Furnished Uranium, of the Contract General Provisions (Enclosure No. 8). Further, all uranium furnished to the Contractor by the Commission shall be returned to the Government in the form of manufactured end product [REDACTED] (or be utilized in another Commission contract) as provided for under Article 45, Government-Furnished Uranium, of the Contract General Provisions (Enclosure No. 8).

Attention is also invited to the fact that the Contractor is financially responsible for the value of any special nuclear material which is not returned to the Government or which is not transferred to another Commission contract as provided for in Article 45 of Enclosure 8. The value of such special nuclear material shall be \$13.69 per gram of U-235.

2. Government-Furnished [REDACTED]

The Commission will furnish at no cost to the Contractor, F.O.B. carrier, Contractor's Plant, [REDACTED]

[REDACTED] for use in the manufacture of control rods. Your

[REDACTED]

[REDACTED]

[REDACTED]

proposal should include a list of [REDACTED] for the spare components and for each core, specifying form, quantities, dimensions [REDACTED] required by the Contractor will be considered, along with the price and other factors, in evaluating the proposals. The Contractor will be charged \$20.00 for each pound [REDACTED] wire required in excess of the quantities agreed to be furnished by the Commission without cost to the Contractor.

Attention is invited to the fact that the Contractor is financially responsible for [REDACTED] not returned to the Government as provided for in Article 46 of Enclosure 8. The value [REDACTED] \$50.00 per pound.

3. Allocation of Zirconium Metal

The Commission will allocate for purchase by the Contractor, or its designee, zirconium metal meeting the specifications included in Commission Contract AT(11-1)-391 with the Columbia National Corporation. Allocation procedures and arrangements have been furnished to each invitee in connection with previous proposals. Your proposal is to be based on the price of \$7.80 per pound for zirconium metal produced by the Columbia National Corporation, delivery F.O.B. carrier, producer's plant, Pace, Florida. Alternate proposals based on the use of other zirconium are not desired. Your proposal shall include a pricing formula for adjusting your proposal, or the price of any contract which may be awarded as a result of your proposal, in the event the price for zirconium metal upon which your proposal is based is either increased or decreased. Your proposal should also indicate the number of pounds of zirconium metal required for each core and the spare components.

Attention is invited to the contract specifications for zirconium sponge [REDACTED]. The Commission's sponge contractors are not currently obligated contractually to meet the sponge specification limits pertaining to uranium and U-235 of [REDACTED]. However, it is expected that the sponge producers will meet these limits. These specifications also require isotopic analysis to determine the ratio of U-235/U-238 contained in zirconium sponge and zircaloy wrought products. The Contractor shall be responsible for making arrangements for such measurements. Determination of uranium enrichment by an approved process for measurement of specific alpha activity will be acceptable for purposes of the contract specification requirements.

The terms and conditions applicable to the zirconium metal allocated by the Commission are contained in Article 47 of the Contract General Provisions (Enclosure No. 8) to this Invitation.

4. Utilization of Zirconium and Zircaloy Material Acquired Under Prior Contracts

Excess quantities of zirconium and zircaloy material and zircaloy scrap generated under prior contracts for Naval Reactor cores will be approved for use in [REDACTED]

the manufacture of the items covered by your proposal provided specification requirements are met. Your proposal should identify the quantity and origin of any such material upon which your proposal is based.

5. Responsibility for all Other Materials

The Contractor shall have the sole responsibility for procurement of all other materials required and the cost of such materials is to be included in the proposed contract prices.

6. Delivery and Transportation of Reactor Cores and Spare Components

Delivery of the reactor cores shall be F.O.B. carrier, Contractor's Plant. However, your proposed prices should include transportation of each complete core in a shipping container, furnished by the Commission at no cost to the Contractor, from the Contractor's Plant to and loading on Commission-designated rail carrier's equipment or Government equipment at the nearest suitable rail siding. Transportation of the core in a shipping container shall be accomplished in accordance with the requirements set forth in Enclosure 7, and your proposed prices should be based upon these requirements. Contract provisions pertaining to this transportation work are contained in Articles 49 and 50 of the Contract General Provisions (Enclosure No. 8). Delivery of spare components shall be F.O.B. carrier, Contractor's Plant. Spare fuel assemblies shall be shipped in special metal containers, furnished by the Commission at no cost to the Contractor.

7. Quality Control

The Contractor is required to maintain quality control, and analytical and inspection procedures necessary to assure compliance with the contract specifications.

8. Subcontracts

Your proposal should identify any work you expect to subcontract. A description of the work, its estimated dollar value and a list of proposed subcontractors should be furnished. It is to be recognized that in the event your company is awarded a contract, specific approval to subcontract any of the work under the contract, including any work to be performed by lower tier subcontractors, must be secured. In considering such requests for approval, the Commission reserves the right to review process outlines and manufacturing methods with respect to certain portions of the work.

9. Special Tooling

It is a policy of the Government that the Contractor shall provide all tooling necessary for the manufacture of [REDACTED] Spare Components. However, should special tooling meeting the definition set forth in Article [REDACTED], Special Tooling, of the Contract General Provisions (Enclosure No. 8) be required, a detailed description of such Special Tooling shall be furnished in your proposal. The extent such tooling costs have been included in your proposed prices is to be indicated in your price breakdowns. Any special tooling acquired for use under your existing contracts, which you desire to use in connection with the work covered by your proposal should be identified.

[REDACTED]

10. Use of Government-Owned Facilities or Equipment

It is a policy of the Government that the Contractor shall provide all facilities and equipment necessary to the manufacture of [REDACTED] Spare Components. However, should you contemplate the use of any Government-owned facilities or equipment in the manufacture of these cores, including work to be performed by any lower-tier sub-contractors, your proposal should identify such contemplated usage. The representation forwarded in Enclosure 5 should be appropriately completed and submitted with your proposal.

11. Priority Rating

Priority Rating DO-E-2 will be certified under DMS Regulation No. 1 for the manufacture of [REDACTED] Spare Components.

12. Contract Terms

Contract terms will be those included in the General Provisions, Enclosure 8. Should you deem it necessary to take any exception to these terms or any of the contract enclosures included in this invitation for proposals, or to propose any change thereto, such exception or change must be clearly specified in your proposal and must be fully justified.

13. Certifications and Representations

The certifications and representations contained in Enclosure 5 should be appropriately completed and submitted with your proposal.

14. Proposal Form/Cost and Price Analysis

The Proposal Form (Enclosure No. 9) should be used as a guide in preparing your proposal. The dates upon which materials furnished by the Government are desired in order to meet your proposed core delivery dates should be indicated on this form. Attached to the Proposal Form is a "Cost and Price Analysis" form to be used in preparing price breakdowns for the cores to be supplied under any contract resulting from this Invitation. Price breakdowns must be submitted and shall include the information listed on the "Cost and Price Analysis" form. It is to be noted that the "Cost and Price Analysis" form has been revised from those previously included in PNRO invitations. The "Cost and Price Analysis" form is to be certified by an official of your Company with authority to commit the Company in an amount at least equal to the total price of the proposal. Failure to submit the price breakdown and cost data provided for herein will be considered, along with price and other factors, in evaluating proposals and may result in the proposal being considered non-responsive to this Invitation.

[REDACTED]

15. Alternate Quotations

Your proposal should include alternate quotations as follows:

1. Manufacture of the second core [REDACTED]
as set forth in WAPD-CM(MA)-136, dated December 4,
1961, previously furnished your Company.

2. Manufacture of the third core [REDACTED]
[REDACTED]

If your required quantity of zirconium metal is changed as a result of
either Alternate No. 1 or Alternate No. 2, such change in requirements
should be indicated in the Proposal Form (Enclosure No. 9).

[REDACTED]

REQUIREMENTS FOR TRANSPORTATION OF AN
ASSEMBLED NAVAL REACTOR CORE
JANUARY 22, 1962

The Contractor shall be responsible for transporting or arranging for the transportation of the assembled Naval Reactor Core from the Contractor's Plant to the nearest rail siding in a Government-furnished Shipping Container. The transporting of an assembled Naval Reactor Core will be accomplished in accordance with the following requirements:

1. The Contractor must arrange for the services of a heavy hauling company to transport the empty container from the nearest rail siding to the Contractor's Plant, if this cannot be accomplished by the Contractor.
 2. An empty shipping container will be furnished to the Contractor by the Government F.O.B. Contractor's Plant.
 3. The cranes used in the transfer operations must be tested to 125% of the anticipated lift prior to lifting the loaded container.
 4. The Contractor shall provide personnel to make a radiological survey of the core cartridge prior to loading in the shipping container. Upon completion of loading of the core cartridge and after the container has been properly purged and pressurized, the Contractor shall again conduct a radiological survey of the loaded container. Upon completion of the second radiological survey, the cognizant Naval Inspector will affix two box car door seals on the shipping container. The results of these surveys will be reported to the AEC representative designated to accept delivery of the core.
 5. The Contractor must arrange for the services of a heavy hauling company to transport the loaded shipping container from the Contractor's Plant to the nearest rail siding.
 6. Movement of the loaded container may take place at any hour of the day on any day of the week, except Saturday, Sunday, or a legal holiday, and once the loading operation commences work will continue on an uninterrupted basis provided the loaded container and the loading of other contract items, if applicable, are acceptable to the AEC representative.
 7. Arrangements must be made with the local or State police, as necessary, to restrict traffic on the route of travel during the period of core movement.
- [REDACTED]
- [REDACTED]
- [REDACTED]

8. The Contractor shall arrange for all road permits for tractors, cranes and movement of loaded vehicles.
 9. The Contractor must provide four (4) security guards to accompany the loaded container to the rail siding and remain until the train shipment is underway.
 10. If hills exist between the Contractor's Plant and the railroad siding, the Contractor must provide two (2) buffer tractors, cabled to the front and rear of the tractor and trailer hauling the loaded container, to insure against a "runaway situation" while descending hills. The speed of this caravan will be limited to five (5) miles per hour.
 11. It is anticipated that a rail flat car, steel or wooden deck, will be used to transport the loaded container. The shipping container must be securely fastened to the bed of the rail car by the Contractor in accordance with separate instructions to be furnished by the Commission. The individual welds and holddown arrangements performed by the Contractor will be subject to acceptance by a representative of the Commission and the Car Inspector of the cognizant railroad.
 12. All additional contract items will be loaded on/or in railcars furnished by the railroad upon request by the Commission. The shoring or bracing arrangement will be such as to insure safe shipment and will be subject to acceptance by a representative of the Commission and the Car Inspector of the cognizant railroad.
 13. The Contractor shall furnish to the Commission three (3) full bottles of nitrogen. One full bottle of nitrogen shall be connected to the container through a regulator and suitable hose or copper tubing. If requested by the Commission, the Contractor shall furnish the necessary services to connect a rubber hose from the fitting on the shipping container to a pressure gage on the escort car. The regulator shall be furnished by the Commission.
 14. The Contractor shall furnish a suitable rack for securing two (2) nitrogen bottles adjacent to the one (1) nitrogen bottle connected to the shipping container. The Contractor shall also furnish suitable racks for two (2) fire extinguishers, which shall be securely fastened on the floor of the flat car as specified by a representative of the Commission. The fire extinguishers shall be furnished by the Commission.
 15. The Commission will make arrangements with the railroad for the train and the routing thereof. It is assumed that the Contractor will desire to have the railcar or cars available at the nearest siding approximately one day in advance of the shipment date to do preliminary work in connection with the actual loading. Therefore, the Contractor must give the Commission at least 72 hours notice in advance of the time the car or cars are required at the siding. If the railcar or cars remain at the rail siding in excess
- [REDACTED]

[REDACTED]

of 48 hours and the railroad assesses demurrage and/or detention charges against such railcars, such charges beyond the 48 hours shall be the responsibility of the Contractor, except for such portion of the time that may be caused by act of the Commission. In such event, the Commission will assume responsibility for demurrage and/or detention charges to the extent that its act caused the imposition of such charges.

16. The Contractor shall submit to the Contracting Officer prior to transporting the cores (a) a drawing of the area between the Contractor's Plant and the nearest rail siding and showing type, width, and traffic conditions of pertinent roads; hills; the location and capacity of bridges, and (b) detailed data concerning the nearest railroad loading site. This information need not be supplied if it has previously been given and if there has been no substantial change since that submission.
- [REDACTED]

U. S. ATOMIC ENERGY COMMISSION

PNR-18
Contract No. AT(36-1)-104

SUPPLY CONTRACT

Sheet No. 1

No. of Sheets 5

Issued By Pittsburgh Naval Reactors Office
P. O. Box 1105
Pittsburgh 30, Pennsylvania

To Metals & Controls Inc.
34 Forest Street
Attleboro, Massachusetts

Delivery F.O.B. Contractor's Plant, Attleboro,
Massachusetts, in accordance with Article
49 of the attached General Provisions.

Appropriation Symbol and Title

89X0101.93

Discount Terms None

The Contractor shall furnish and deliver the following supplies in accordance with the terms, provisions and conditions specified on this page and on the attached sheets.

Item No.	Supply or Services	Quantity	Unit	Unit Price	Amount
1	[REDACTED] assembled, consisting of the items shown in the List of Core Components for One [REDACTED] in accordance with the drawings and specifications in the Master List dated April 2, 1962; and transportation of the [REDACTED] Core assembled from the Contractor's Plant, Attleboro, Massachusetts, loaded on board railcar at the American Siskraft Company rail siding, Attleboro, Massachusetts, in accordance with Requirements for Transportation of an Assembled Naval Reactor Core. [REDACTED] [REDACTED] [REDACTED]	1	ea.		[REDACTED]

Item No.	Supply or Services	Quantity	Unit	Unit Price	Amount
2	[REDACTED] assembled, consisting of the items shown in the List of Core Components for One [REDACTED] in accordance with the drawings and specifications in the Master List dated April 2, 1962; and transportation of the [REDACTED] Core assembled from the Contractor's Plant, Attleboro, Massachusetts, loaded on board railcar at the American Siskraft Company rail siding, Attleboro, Massachusetts, in accordance with Requirements for Transportation of an Assembled Naval Reactor Core.	1	ea.		[REDACTED]
3	[REDACTED] assembled, consisting of the items shown in the List of Core Components for One [REDACTED] in accordance with the drawings and specifications in the Master List dated April 2, 1962; and transportation of the [REDACTED] Core assembled from the Contractor's Plant, Attleboro, Massachusetts, loaded on board railcar at the American Siskraft Company rail siding, Attleboro, Massachusetts, in accordance with Requirements for Transportation of an Assembled Naval Reactor Core.	1	ea.		[REDACTED]
4	[REDACTED] assembled, consisting of the items shown in the List of Core Components for One [REDACTED] in accordance with the drawings and specifications in the Master List dated April 2, 1962; and transportation of the [REDACTED] Core assembled from the Contractor's Plant, Attleboro, Massachusetts, loaded on board railcar at the American Siskraft Company rail siding, Attleboro, Massachusetts, in accordance with Requirements for Transportation of an Assembled Naval Reactor Core.	1	ea.		[REDACTED]
5	[REDACTED] assembled, consisting of the items shown in the List of Core Components for One [REDACTED] in accordance with the drawings and specifications in the Master List dated April 2, 1962; and transportation of the [REDACTED] Core assembled from the Contractor's Plant, Attleboro, Massachusetts, loaded on board railcar at the American Siskraft Company rail siding, Attleboro, Massachusetts, in accordance with Requirements for Transportation of an Assembled Naval Reactor Core.	1	ea.		[REDACTED]

Item No.	Supply or Services	Quantity	Unit	Unit Price	Amount
6	[REDACTED] assembled, consisting of the items shown in the List of Core Components for One [REDACTED] in accordance with the drawings and specifications in the Master List dated April 2, 1962; and transportation of the [REDACTED] Core assembled from the Contractor's Plant, Attleboro, Massachusetts, loaded on board railcar at the American Sisalkraft Company rail siding, Attleboro, Massachusetts, in accordance with Requirements for Transportation of an Assembled Naval Reactor Core. Total Amount This contract consists of Sheet No. 1, Continuation Sheets Nos. 2, 3, 4 and 5, and the following attachments: A. [REDACTED] Core General Provisions (42 pages, Confidential - Restricted Data). B. Master List of Contract Drawings and Contract Specifications for One [REDACTED] [REDACTED] dated April 2, 1962 (8 pages, Confidential - Restricted Data). C. List of Core Components for One [REDACTED] [REDACTED] dated December 8, 1961 (2 pages, Confidential - Restricted Data). D. Requirements for Transportation of an Assembled Naval Reactor Core dated March 27, 1962 (3 pages, Confidential - Defense Information).	1	ea.	[REDACTED]	[REDACTED]

Contractor represents that he ☐ is, ☒ is not, a small business concern. (See Code of Federal Regulations, Title 13, Part 103, as amended, which contains the detailed definition and related procedures.) If the Contractor is a small business concern and is not the manufacturer of the supplied provided for in this contract, he also represents that all the supplied to be furnished hereunder ☐ will, ☐ will not, be manufactured or produced by a small business concern in the United States, its Territories, its possessions, or the Commonwealth of Puerto Rico.

IN WITNESS WHEREOF, the parties hereto have executed this Contract No. AT(36-1)-104 as of this 26th day of April 1962.

THE UNITED STATES OF AMERICA

By /s/ Lawton D. Geiger
Lawton D. Geiger, Manager
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission

METALS & CONTROLS INC.

By /s/ George L. Williams

Title M&C Nuclear Products
Group Manager

Metals & Controls Inc.

(Business Address)

P.O. Box 898
Attleboro, Mass.

TEXAS INSTRUMENTS INCORPORATED
(Guarantor)

By /s/ E. O. Vetter

Title Vice Pres.

Metals & Controls Inc.
(Business Address)

A Corporate Division of
Texas Instruments Incorporated
34 Forest Street
Attleboro, Mass.

I, Townsend M. Gunn, certify that I am Clerk of Metals & Controls Inc., the Contractor herein; that George L. Williams who signed this instrument on behalf of the Contractor was then Nuclear Products Group Manager of said corporation; that said instrument was duly signed for and on behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

/s/ Townsend M. Gunn

(Corporate Seal)

I, John M. Walker, certify that I am Division Controller of Texas Instruments Incorporated, the Guarantor herein; that E. O. Vetter who signed this instrument on behalf of the Guarantor was then Vice President of said corporation; that said instrument was duly signed for and on behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

/s/ John M. Walker

(Corporate Seal)



UNITED STATES
ATOMIC ENERGY COMMISSION
PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
P. O. BOX 1105
PITTSBURGH 30, PENNSYLVANIA

RECEIVED BY G. P. HOWLAND

IN REPLY REFER TO:

CMD:5926:5

July 30, 1962

PNRO-18 AUG - 2 1962

Distribution

George P. Howland
Metals and Controls, Inc.
Post Office Box 898
Attleboro, Massachusetts

J. Johnson - Action
A. Davidson *M. Perra*
E. Sterling *S. Clark*
E. Hall *T. Rodgers*
Murphy Pennone *J. Hall*

PNRO-18
Subject: CONTRACT AT(36-1)-104 - Approval Request MC:104:5
"Welding Procedures" [REDACTED]

Dear Mr. Howland:

The subject procedures forwarded by Metals and Controls, Inc., were approved on June 5, 1962 without comment, although the procedures did not conform with the requirements of the applicable product specification NavShips 250-1500.

A recent review [REDACTED] indicates that welding procedures can be developed which conform with NavShips 250-1500 for this application. The approval of AR:MC:104:5 is hereby withdrawn and Metals and Controls should develop welding procedures which conform with the product requirements.

// 7/26/62
Comply.

The following documents submitted by Metals and Controls, for approval, are being returned without action since they deal with Approval Request MC:104:5.

RECS MCR:104:7; MCR:104:9; MCR:104:10; and MCR:104:11

Very truly yours,

Harold H. Hoffman
Harold H. Hoffman, Director
Core Manufacturing Division

CC: Resident Government Inspector

[REDACTED]

[REDACTED]

[REDACTED]



IN REPLY REFER TO:

UNITED STATES
ATOMIC ENERGY COMMISSION
PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
P. O. BOX 1105
PITTSBURGH 30, PENNSYLVANIA

DIST. 2. GPHOWLAND
GANSIER,
J. CALDWELL
✓ DAVIDSON/JOHNSON
NASH

FEB 13 1962

PNRO-18

RECEIVED BY 1. 1. 1. 1.

FEB 17 1962

Mr. P. Howland, Manager
Nuclear Products
Controls Inc.
Forest Street
Avonleboro, Massachusetts

Subject: ADDENDUM NO. 1 TO INVITATION NO. PGH-62-2 FOR THE SUPPLY
OF [REDACTED] CORES AND SPARE COMPONENTS

Dear Mr. Howland:

Reference is made to my letter dated January 30, 1962, which invited proposals for the supply of [REDACTED] Cores.

The purpose of this Addendum No. 1 is to provide you with revisions and additions to the Contract General Provisions, which were furnished as Enclosure No. 8 to my letter of January 30, 1962

Section (j) (2) of Article 45, Government-Furnished Uranium, is hereby deleted by this Addendum No. 1 and the following new section (j) (2) is substituted therefor in Article 45:

- "(2) If the disagreement is not resolved by mutual agreement between the shipper and receiver, such disagreement shall be resolved in accordance with the following procedures at the written request of either party:
- (1) If the disagreement concerns bulk measurement (i.e. total volume, gross and net weight, total piece count or any other measurement made on the entire quantity of material involved), repeat measurements shall be performed by an umpire mutually agreed to by both parties at a mutually agreed upon site. The umpire shall make his

[REDACTED]

[REDACTED]

[REDACTED]

determination and findings in writing and furnish a copy thereof to both parties. The umpire's results will be conclusive on both parties. The party whose original measurement result is furthest from the umpire's result will bear the umpire's charges; provided, in the event the umpire's result is equidistant between the shipper's and receiver's results, the parties will each bear one-half of the umpire's charges.

- (11) If the disagreement concerns results obtained from analysis of a sample, an official sample will be submitted to an umpire mutually agreed upon, for analysis. The umpire shall make his determination and findings in writing, and furnish a copy thereof to both parties. The umpire's results will be conclusive on both parties. In the case of a disagreement with respect to specification limits based on an official sample, the receiver will bear the umpire's charges if the umpire's value is within specification limits, and the shipper will pay the umpire's charges if the umpire's value is not within the specification limits. In the case of a disagreement concerning quantitative determinations based on an official sample, the umpire's value will be used and the party whose value is furthest from the umpire's value will pay the umpire's charges; provided, in the event the umpire's value is equidistant between the shipper's and the receiver's value, the parties will each bear one-half of the umpire's charges."

The second sentence of Section (a) of Article 50, Government-Furnished Containers, which reads as follows:

"Such containers shall be delivered F.O.B. carrier, nearest railroad siding to the Contractor's plant, so as to be available for use by the Contractor when needed."

is hereby deleted by this Addendum No. 1 and the following is substituted therefor:

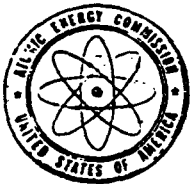
"Core shipping containers shall be delivered F.O.B. carrier, nearest railroad siding to the Contractor's plant, and the spare fuel assembly containers shall be delivered F.O.B. carrier, Contractor's plant, so as to be available for use by the Contractor when needed."

No other change is made to Invitation No. PGH-62-2 and proposals are still due February 27, 1962.

Very truly yours,

Lawton D. Geiger
Manager

[REDACTED]



IN REPLY REFER TO:

UNITED STATES
ATOMIC ENERGY COMMISSION
PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
P. O. BOX 1105
PITTSBURGH 30, PENNSYLVANIA

rec'd 2-5-62

*Send as copy
PA 170-18 given Johnson*
JAN 30 1962

S. P. Howland, Manager
Navy Nuclear Products
Metals & Controls Inc.
34 Forest Street
Attleboro, Massachusetts

Subject: INVITATION NO. PGH-62-2 FOR THE SUPPLY OF [REDACTED]
[REDACTED] CORES

Dear Mr. Howland:

You are hereby invited to submit a fixed price proposal for the supply of [REDACTED] Cores and Spare Components as described herein.

Your proposal in response to this invitation should be submitted to this office in quintuplicate not later than 2:00 P.M. Eastern Standard Time, February 27, 1962, in two envelopes. The inner envelope containing your proposal should be sealed and marked on its face "Proposal for the Supply of [REDACTED] Cores." Security classification should be indicated where applicable. The outer envelope should be addressed to this office in a normal manner.

Each [REDACTED] Core and the Spare Components to be supplied consist of the items identified in Enclosure 1 entitled "List of Core Components for One [REDACTED] December 8, 1961," and in Enclosure 2 entitled "List of Spare Components for [REDACTED] December 8, 1961," respectively. Your proposal is to be based on the information contained in the following enclosures:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

1. List of Core Components for One [REDACTED]
[REDACTED] December 8, 1961.
2. List of Spare Components for [REDACTED]
[REDACTED] December 8, 1961.
3. Master List of Contract Drawings and Contract Specifications for One [REDACTED]
[REDACTED] January 22, 1962.
4. Contract Drawings and Specifications listed in Enclosure 3 which have not been furnished previously.
5. Contractor Certifications and Representations.
6. Instructions to Bidders.
7. Requirements for Transportation of an Assembled Naval Reactor Core.
8. Contract General Provisions.
9. Contract Proposal Form.

Your proposal should be based on performance of preproduction evaluation work in accordance with the requirements contained in Preproduction Evaluation Information for [REDACTED] which is a part of the ordering data pertaining to Naval Reactors Specification No. 1.

Your proposal should quote separate prices on the following alternate quantities of [REDACTED] cores:

- | | |
|----------------|-----------------------|
| a. One Core | e. Fifth Core |
| b. Second Core | f. Sixth Core |
| c. Third Core | g. Spare Components - |
| d. Fourth Core | |

Your proposal should include alternate quotes as follows: 1. Manufacture of one core using [REDACTED] and 2. Manufacture of one core (not the same one as indicated on Alternate 1) [REDACTED]
[REDACTED] Further details on the alternate bids are set forth in Paragraph 15, Instructions to Bidders, (Enclosure No. 6).

[REDACTED]

[REDACTED]

Prices should be based upon the delivery of the reactor cores and the Spare Components on the delivery date which will result in the lowest cost to the Government. Your proposed delivery dates should be indicated on the Proposal Form, (Enclosure No. 9).

Requirements for furnishing price and cost data in your proposal have been revised and made more definite than those of past invitations from this office. Details on the new requirements for price and cost data are set forth in Paragraph 14, Instructions to Bidders, (Enclosure No. 6).

Contract award will be made on a basis which will be most advantageous to the Government: price, delivery and all other factors considered. It is to be understood that negotiations may be undertaken by the Government on the basis of the proposals received. The Government reserves the right to reject any or all proposals.

Very truly yours,

Lawton D. Geiger
Manager

Enclosures:
1, 2, 3, 5, 6, 7, 8,
and 9, as listed above.

[REDACTED]

MEMORANDUM

TO: D. Davidson
S. Clark
G. Sterling
D. Hamilton
I. Hall

CC: W. Stevenson
M. Anthony
G. Williams

May 10, 1962

FROM: G. Howland

SUBJECT: Contract AT(36-1)-104 For the Supply of Six
[REDACTED] Cores - PNRO-18

Attached for information and use of the addressees are complete sets of contract documents for PNRO-18. We are limited to five conformed copies. It is recognized that S. Stevenson is directly concerned with many of the contract particulars and it is requested that he request copies of those specific documents required from Document Control.

Contract AT(36-1)-104

1. Cover Sheets Number 1 through 5 of the Supply Contract; Signed by Geiger, Williams, Vetter, dated April 26, 1962.
2. [REDACTED] Cores - General Provisions, Attachment A.

These provisions provide specific as well as general information on the Contract. The following articles are of specific concern to the individuals listed:

Articles 5, 31	S. Clark
Articles 2, 31, 32, 34	D. Davidson
*Articles 19, 26, 27, 28, 43, 44, 45, 48.	G. Sterling
Articles 6, 16, 46, 47, 48, 49, 51	W. Stevenson
Articles 7, 8, 9, 10, 11, 12, 22, 40, 50	D. Hamilton
Articles 35, 36.	All

*A. G. Sterling note [REDACTED] Terms and Conditions should be updated to reflect these latest terms. Also note that we are specifically required to pass on identical articles as designated, in our subcontracts.

3. Master List of Contract Drawings and Specifications For One [REDACTED]
[REDACTED] dated April 2, 1962.

Although the contract was signed on the basis of this April 2, 1962 Master List, we are currently reviewing those drawings associated with a later proposed list dated 4/16/62. These plan list changes are reputed to be only updatings of old drawings, and specifications by the customer. This new list will be incorporated by Change Notice in the near future.

[REDACTED]

[REDACTED]

Item 9 of Section II, Attachment to Contract Specifications as Noted, dated 4/2/62 contains important information and is available from Irma Hall.

4. List of Core Components For One [REDACTED] dated December 8, 1961.

Upon future incorporation by Change Notice of the 4/16/62 Master List noted in 3. above, the December 8, 1961 List of Core Components will be revised to reflect the changed drawing numbers.

5. Requirements For Transportation of an Assembled Naval Reactor Core, Attachment D, dated March 27, 1962.
6. Specifications for [REDACTED] to AEC - WAPD-NAC-(PA)-448.
Specifications for [REDACTED] to AEC - WAPD-NAC-(PA)-449.
Specifications for [REDACTED] to AEC - WAPD-NAC-(PA)-450.

These specifications are furnished in conjunction with our contract responsibility for complete recovery and return of uranium to the Government as per Article 46 of the General Provisions.

Certain additional information not appearing in the Contract Documents is as follows:

1. The contract price has been adjusted to reflect a change in price of Columbia National Sponge from \$7.80 per pound as quoted, to \$7.70 per pound as allocated.
2. The contract delivery dates are based on the following schedule for delivery of material to be furnished by the Commission:

Virgin U-235 (Maximum Input)

[REDACTED]

Total maximum input for 6 cores is [REDACTED]
made up of recycle scrap from other M&C contracts.

[REDACTED]

[REDACTED]	10/15/62	[REDACTED]	4/15/63
[REDACTED]	12/15/62	[REDACTED]	6/15/63
[REDACTED]	2/15/63	[REDACTED]	8/15/63

In the event that we require earlier delivery [REDACTED] for evaluation purposes, this will be provided.

[REDACTED]

Zirconium Sponge Allocation Schedule

20,760 pounds from May, 1962 production.
20,110 pounds from July, 1962 production.
20,110 pounds from September, 1962 production.
20,000 pounds from November, 1962 production.
20,000 pounds from January, 1962 production.
20,000 pounds from March, 1962 production.

It is agreeable to the Commission that scrap and unused Zircaloy from previous or existing contract be utilized in the performance of this contract including up to 8,000 pounds of scrap or unused Zircaloy originating from zirconium produced by the National Distillers and Chemical Corporation (formerly R.M.I.) at no change in contract price. However, approval for the transfer of such Zircaloy must be obtained from PNRO or SNRO in accordance with the provisions of each contract from which transferred and as required by L. D. Geiger's letter of May 26, 1961.

The Commission also has agreed that we are permitted, subject to the submission and approval of appropriate process outlines, to utilize reconstituted zirconium sponge converted from Zircaloy scrap originating from allocated zirconium sponge.

Further, although the document "Attachment to Contract Specifications as Noted" dated 4/2/62 specifies the additional inspection of zirconium sponge to Standard 105, this requirement is not mandatory. Allocated sponge will have been previously Navy inspected for discoloration to Bettis Standard 105. This prior Navy Inspection does not relieve our converter of his responsibility to produce wrought product meeting all [REDACTED] as signed does not include the additional \$.05 per pound inspection cost which this requirement would entail. However, I understand that there is some concern that this dual inspection might be necessary to assure against inclusions in the final product -- and that there is particular concern with regard to Columbia National Sponge. If we feel that this inspection is necessary for our own protection we should require our converter to perform at the additional cost of \$.05/pound. If this action is taken, advise the Product Office so that we can provide for reimbursement from the customer.

3. New analytical requirements exist on this contract as follows:

- a. [REDACTED] at top, middle, and bottom positions.
- b. U-235 [REDACTED] as per approved sampling plans. The former practice of total U [REDACTED] with isotopic content calculated therefrom is no longer acceptable on this or subsequent contracts.

4. The Commission's Record Retention Policy as set forth in L. D. Geiger's letter, dated December 23, 1959 applies to this contract as well as the requirements for release points as set forth in E. E. Kintner letter of February 27, 1962.

[REDACTED]

5. In connection with Article 19 of the General Provisions, Priorities, Allocations, and Allotments, DMS Forms 4A and 4S, previously furnished to M&C, requesting allotments of controlled materials will be submitted by M&C to the Pittsburgh Naval Reactors Office.
6. We have accepted financial responsibility for the cost of recovery of any recyclable scrap which may exist upon completion of this contract. Obviously our objective will be to recycle all possible scrap into this or subsequent core contracts. A second, but less desirable alternative is to transfer such recyclable material to another core vendor. Such a transaction provides us with full credit for the contained U but the prospects of finding a taker are uncertain.
7. Extra dollars have been negotiated into the contract to compensate for the requirement that no more than 3 of our 6 barrels be placed with AC York Works.
8. Our proposal on which this contract is based included various Technical Assumptions and Exceptions, designated as Appendix 2 in our quotation package. A copy of Appendix 2 (9 pages) is attached. Also attached are copies of two letters from H. H. Hoffman, CMD:5669:1 and 5631:1 which reply to the M&C assumptions and exceptions. Additional comments on the CMD letters are as follows:

A.2 - For record purposes these standards should be grouped on a single AR referencing Hoffman's letter, and submitted for approval.

A.3 - These REC's should likewise be submitted on a single AR for approval. D. Davidson has already recomposed this list on a -81 contract or common submittal listing.

B.1 - Additional dollars for this work has been negotiated into the contract price. Sampling plans must be submitted for approval.

B.2 - Additional dollars to cover cost [REDACTED] have been negotiated into the contract.

B.4 - Submit for record purposes - combine.

C.3 - Submit for record purposes - combine.

D. - Submit for record purposes - combine.

F.4 - Latest information from Pittsburgh indicates that they will back off this position and go back to smear testing. Our contract does not cover dollars for alpha counting and the customer is aware of this.

F.7 - This requirement will be enforced. We can probably get a qualified person from Boston for this certification.

F.8 - Additional polyethylene as ordered must be colored.

[REDACTED]

F.9 - Approved per CMD:5669:1 letter. Submit for record purposes - combine.

G.1.b - Commission recognizes that no known method for accomplishing this exists. A finite dollar amount has been tentatively provided for accomplishing this operation on each barrel. We will wait and see what develops and advise Product Office of anticipated cost.

G.3.a - Machining of this surface is required as per CMD:5669:1 letter. No dollars in contract to cover this. Submit REC proposing current practice for possible approval advancing arguments on additional heat input requirements, distortion problem, etc.

G.4 - As per earlier discussion with D. Davidson, this requirement must be met.

G.5 - Customer points out that weld location is not fixed and can be moved away from the critical heat zone. Mock-up joint can be used to prove penetration.

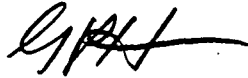
H.2 - This resolution is particularly important to procurement - R. Perry note.

All other items in Hoffman's letter are believed to be self-explanatory without further comment. If there are further questions, contact the Product Office.

The Navy Product Office will maintain current records of all contract documents and changes thereto. In addition, the addressees will be kept abreast of all contract changes. Irma Hall, as document custodian, maintains up-to-date records as directed by the Product Office. We are certain the Engineering and Quality Control Departments will also want to maintain current records for departmental information and control purposes.

The distribution of these documents is limited to the number of copies available and is confined to the addressees. For security reasons and to preclude the chances of use of out-of-date documents, such a limited distribution is, in fact, desirable. The addressees should limit and specifically designate further distribution within their departments since the responsibility of keeping other persons informed within those departments will be theirs.

Any questions or requests for clarification of any of this material will be promptly handled by the Product Office.



George P. Howland
Manager, Navy Nuclear Products

GPH/poc



REQUIREMENTS FOR TRANSPORTATION OF AN
ASSEMBLED NAVAL REACTOR CORE
MARCH 27, 1962

PNR-18

300

The Contractor shall be responsible for transporting or arranging for the transportation of the assembled Naval Reactor Core from the Contractor's Plant to the nearest rail siding in a Government-furnished Shipping Container. The transporting of an assembled Naval Reactor Core will be accomplished in accordance with the following requirements:

1. An empty shipping container will be furnished to the Contractor by the Government F.O.B. carrier, nearest rail siding to the Contractor's Plant.
2. The Contractor must arrange for the services of a heavy hauling company to transport the empty container from the nearest rail siding to the Contractor's Plant, if this cannot be accomplished by the Contractor.
3. The cranes used in the transfer operations must be tested to 125% of the anticipated lift prior to lifting the loaded container.
4. The Contractor shall provide personnel to make a radiological survey of the core cartridge prior to loading in the shipping container. Upon completion of loading of the core cartridge and after the container has been properly purged and pressurized, the Contractor shall again conduct a radiological survey of the loaded container. Upon completion of the second radiological survey, the cognizant Naval Inspector will affix two box car door seals on the shipping container. The results of these surveys will be reported to the AEC representative designated to accept delivery of the core.
5. The Contractor must arrange for the services of a heavy hauling company to transport the loaded shipping container from the Contractor's Plant to the nearest rail siding, if this cannot be accomplished by the Contractor.
6. Movement of the loaded container may take place at any hour of the day on any day of the week, except Saturday, Sunday, or a legal holiday, and once the loading operation commences work will continue on an uninterrupted basis provided the loaded container and the loading of other contract items, if applicable, are acceptable to the AEC representative.
7. Arrangements must be made with the local or State police, as necessary, to restrict traffic on the route of travel during the period of core movement.

[REDACTED]

[REDACTED]

[REDACTED]

8. The Contractor shall arrange for all road permits for tractors, cranes and movement of loaded vehicles.
9. The Contractor must provide four (4) security guards to accompany the loaded container to the rail siding and remain until the train shipment is underway.
10. If hills exist between the Contractor's Plant and the railroad siding, the Contractor must provide two (2) buffer tractors, cabled to the front and rear of the tractor and trailer hauling the loaded container, to insure against a "runaway situation" while descending hills. The speed of this caravan will be limited to five (5) miles per hour.
11. It is anticipated that a depressed center rail car (similar to PRR F-29) or rail flat car (steel or wooden deck), will be used to transport the loaded container. The shipping container must be securely fastened to the bed of the rail car by the Contractor in accordance with separate instructions to be furnished by the Commission. The individual welds and bolddown arrangements performed by the Contractor will be subject to acceptance by a representative of the Commission and the Car Inspector of the cognizant railroad.
12. All additional contract items will be loaded on/or in railcars furnished by the railroad upon request by the Commission. The shoring or bracing arrangement will be such as to insure safe shipment and will be subject to acceptance by a representative of the Commission and the Car Inspector of the cognizant railroad.
13. The Contractor shall furnish to the Commission three (3) full bottles of nitrogen. One full bottle of nitrogen shall be connected to the container through a regulator and suitable hose or copper tubing, which also shall be furnished by the Contractor. If requested by the Commission, the Contractor shall furnish the necessary services to connect a rubber hose from the fitting on the shipping container to a pressure gage on the escort car. The regulator and pressure gage shall be furnished by the Commission.
14. The Contractor shall furnish a suitable rack for securing two (2) nitrogen bottles adjacent to the one (1) nitrogen bottle connected to the shipping container. The Contractor shall also furnish suitable racks for two (2) fire extinguishers, which shall be securely fastened on the floor of the rail car as specified by a representative of the Commission. The fire extinguishers shall be furnished by the Commission.
15. The Commission will make arrangements with the railroad for the train and the routing thereof. It is assumed that the Contractor will desire to have the railcar or cars available at the nearest siding approximately one day in advance of the shipment date to do preliminary work in connection with the actual loading. Therefore, the Contractor must give the Commission at least 72 hours notice in advance of the time the car or cars are required at the siding. If the railcar or cars remain at the rail siding in excess

[REDACTED]

of 48 hours and the railroad assesses demurrage and/or detention charges against such railcars, such charges beyond the 48 hours shall be the responsibility of the Contractor, except for such portion of the time that may be caused by act of the Commission. In such event, the Commission will assume responsibility for demurrage and/or detention charges to the extent that its act caused the imposition of such charges.

16. The Contractor shall submit to the Contracting Officer prior to transporting the cores (a) a drawing of the area between the Contractor's Plant and the nearest rail siding and showing type, width, and traffic conditions of pertinent roads; hills; the location and capacity of bridges, and (b) detailed data concerning the nearest railroad loading site. This information need not be supplied if it has previously been given and if there has been no substantial change since that submission.
- [REDACTED]

[REDACTED]

METALS & CONTROLS INC.
ATTLEBORO, MASSACHUSETTS

PROCESS OUTLINE

FOR

FUEL [REDACTED]

FOR CONTRACT AT(30-3)-529

REVISION 0

JUNE 4, 1963

PREPARED BY:

R. O. Malin

R. O. Malin
Process Engineer

APPROVED BY:

D. J. Hjerpe

D. J. Hjerpe
Quality Control Engineer

APPROVED BY:

D. J. Davidson

D. J. Davidson
Chief Engineer - Naval Cores

[REDACTED]

[REDACTED]

APPENDIX

Mandatory Specifications:

19T Dated 10/26/62

Fuel Assemblies - 1 plus NCO-OD-1-1, Rev. 3
Ordering Data dated November 7, 1962.

Mandatory Drawings:

7109F66

Fuel Cluster

M&C Nuclear Specifications:

4-6472

4-6482

4-6481

4-6492

4-6477

4-6488

4-6476

4-6487

4-6494

NOTE: All mention of "M&C Drawing" in this outline refers to these nine drawings.

Standard Instructions:

<u>Number</u>	<u>Section</u>	<u>Title</u>
500	II B	Instructions and Inspection Procedures for Ultrasonic Immersion Inspection of Zirconium

This S.I. replaces those sections
to ultrasonic testing.

Standard Instructions Continued:

<u>Number</u>	<u>Section</u>	<u>Title</u>
500	V C	Instructions and Inspection Procedures for Alpha Activity Counting Using the Eberline Proportional Counter - APC-9.
501	I A	Instructions for Vapor Degreasing.
501	II E	Instructions for Cleaning and Pickling Zirconium [REDACTED]
501	II H	Instructions for Cleaning and Pickling Fuel [REDACTED]
501	III B	Instructions for Corrosion Testing of Zirconium, Zircaloy, [REDACTED]
*502	II B	Instructions for [REDACTED]
*502	II C	Instructions for [REDACTED]
*502	II D	Instructions for [REDACTED]
*503	I G	Instructions for Operation of [REDACTED]
*503	III D	Instruction for Assembling [REDACTED]
*503	III E	Instructions for Welding, Evacuating and [REDACTED]
504	I B	Instructions for Radiography Darkroom.
504	I C	Inspection Procedure for Radiograph Inspection [REDACTED]
		This S.I. replaces those sections [REDACTED] radiographic inspection.
504	I H	Instructions for Radiographing Fuel Plates.
505	I A	Procedure for Vacuum Annealing.

[REDACTED]

NOTES:

The asterisk (*) before and S.I. indicates the S.I. applies to a noncritical process operation or is for M&C operation control only. All S.I.'s so marked are submitted for information. S.I.'s without asterisks are considered mandatory by M&C Nuclear and require customer approval.

One asterisk (*) before an operation means that it is considered noncritical and may be changed or moved within the process or deleted from the process without customer approval. Two asterisks (**) before an operation mean that it is considered noncritical, may be moved within the process without customer approval, but may not be deleted from the process without customer approval.

Additional deburring, cleaning and inspection operations may be used as required throughout the process.

[REDACTED]

INDEX

<u>PHASE</u>	<u>TITLE</u>	<u>PAGE</u>
I	Assemble [REDACTED]	1
II A	Machine, Upset and Corrosion Test [REDACTED] [REDACTED]	3
II B	Machine and Corrosion Test [REDACTED] [REDACTED]	5
III	Corrosion Coupon Testing	7
IV	Critical Dimensions and Tolerances	8

[REDACTED]

[REDACTED]

M&C NUCLEAR PRODUCTS

HAZARDS EVALUATION REPORT

FOR

CONTRACT AT(30-3)-529

FABRICATION [REDACTED]
[REDACTED]

September 9, 1963

METALS & CONTROLS INC.

ATTLEBORO, MASSACHUSETTS

[REDACTED]

Norton M. Weiss
Norton M. Weiss
Health Physicist

[REDACTED]

[REDACTED]

[REDACTED]

NUCLEAR SAFETY CONSIDERATIONS [REDACTED]

I. DESCRIPTION

[REDACTED]

[REDACTED] U (93% enrichment) will be used [REDACTED]

[REDACTED]

II. NUCLEAR SAFETY CONSIDERATIONS

The basic nuclear safety unit for nearly all processing of fuel material prior to actual [REDACTED] Since it is necessary [REDACTED] for quality control and accountability reasons, material from more than one [REDACTED] As scrap is generated during processing, the MSQ will essentially diminish as additional material cannot be added to maintain its size.

The amount of U-235 contained in one [REDACTED] Only under circumstances where moderation is definitely precluded, or where the material configuration is physically maintained in a safe geometry will this MSQ be exceeded at any single operation. Although we are presently proposing to [REDACTED] we are attempting to increase these quantities through the use of nuclear safe fixturing devices. Calculations to justify these increases are being performed by our nuclear safety consultant from MIT, Dr. A. E. Profio. When these calculations have been completed, they will be submitted for your evaluation.

The following pages contain process outlines for [REDACTED] fabrication along with MSQ's for each operation and their justification. Numbers in the MSQ sheet listed under the column operation number refer to a particular operation as described in the process outline for that phase of fabrication. Numbers in the MSQ columns headed by asterisks (*) refer to justifications on the succeeding page.

[REDACTED]

M&C NUCLEAR PRODUCTS
Attleboro, Massachusetts

PROCESS OUTLINE

FOR

CONTRACT AT(30-3)-529

REVISION A

July 5, 1963

PREPARED BY: *R. O. Malin*
R. O. Malin

APPROVED BY: *D. J. Hjerpe*
D. J. Hjerpe
Q.C. Engineer

APPROVED BY: *D. S. Davidson*
D. S. Davidson
Chief Engineer - Naval Jones

APPENDIX

Mandatory Specifications:

19T

Fuel Assemblies-1, plus NCO-OD-1-1, Ordering Data, Rev. 3
Dated November 7, 1962.

Mandatory Drawings:

7109F66

Fuel Cluster

M&C Nuclear Specifications:

1-2147

1-6450

1-6452

2-6454

2-6455

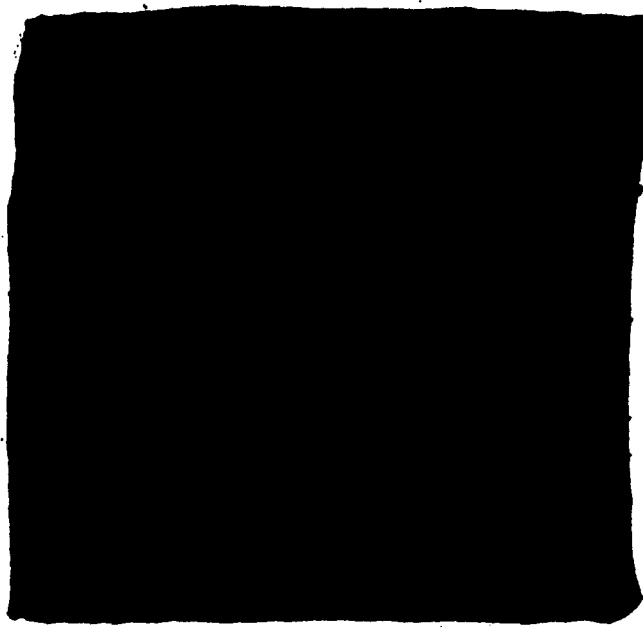
2-6456

2-6457

2-6458

2-6459

2-6460



Standard Instructions:

<u>Number</u>	<u>Section</u>	<u>Title</u>
501	I A	Instructions for Vapor Degreasing
*501	I B	Instructions for Brushing [REDACTED]
501	II E	Instructions for Cleaning and Pickling Zirconium [REDACTED]
505	I A	Procedure for Vacuum Annealing.
*508	I B	Instructions for Consumable Electrode Fusion Welding.

[REDACTED]

INDEX

<u>PHASE</u>	<u>TITLE</u>	<u>PAGE</u>
I	Prepare Zircaloy Melt Stock	1
II	Prepare Master [REDACTED] and Chop Stock Fabrication	2
III	[REDACTED] (Uranium, Zircaloy, [REDACTED])	4
	[REDACTED]	6
	[REDACTED]	7
	C. Use of Any Composition Fuel [REDACTED]	8
	D. Use of Scrap Fuel [REDACTED]	9
	E. Alternate Procedure for Making Fuel From Rejected Fuel [REDACTED]	10
IV	[REDACTED] Assaying and Inspection	11
V	Fabricating Fuel [REDACTED] [REDACTED]	13
VI	Procedure for Assuring [REDACTED] in Bulk Quantities (550 Pounds Maximum) of Scrap Material [REDACTED]	16
	Changes Incorporated into this Rev.	19

[REDACTED]

Standard Instructions (Continued)

<u>Number</u>	<u>Section</u>	<u>Title</u>
509	II B	Instructions for Tungsten Arc [REDACTED]
509	III A	Instructions for Consumable Arc [REDACTED]
*509	IV A	Instructions for Arc-Weld Surface Conditioning [REDACTED]
*510	I A	Instructions for Standard Method of Weighing [REDACTED]

NOTE: The (*) asterisk before an S.I. indicates the S.I. applies to a noncritical process operation or is for M&C operational control only. All S.I.'s so marked are submitted for information. S.I.'s without asterisks are considered mandatory by M&C Nuclear and require customer approval.

One asterisk (*) before an operation means that it is considered noncritical and may be changed or moved within the process or deleted from the process without customer approval. Two asterisks (**) before an operation means that it is considered noncritical and may be moved within the process without customer approval, but may not be deleted from the process without customer approval.

Additional deburring, cleaning, and inspection operations may be used as required throughout the process.

[REDACTED]

[REDACTED]

METALS & CONTROLS, INC.

NUCLEAR PRODUCTS GROUP

HAZARDS EVALUATION FOR

[REDACTED]

PART I: [REDACTED]

Revision "A"

Revised 11/15/62
Peter Duff
Louis Sarkes

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Contained in this document are specific considerations of the criticality hazards of each general type of operation on [REDACTED]

[REDACTED] except for corrosion testing. Maximum safe quantities are listed for each operation, based on the worst possible conditions. General nuclear safety, health-physics, and industrial safety and hygiene rules and practices for this contract (73-Y-297800-MPT) are contained in M&C's Health and Safety Manual.

COMMENT I

For the control of nuclear safety the following specific rules apply to all operations at M&C Nuclear where fuel is handled.

1. Each table top, workbench, machine tool, pickling tank, degreasing tank, autoclave, annealing furnace, drybox or work station is defined as a criticality zone.
2. No more than one maximum safe quantity (M.S.Q.) of fuel bearing material is allowed in a criticality zone.
3. All fuel is transported between work stations on geometrically-safe criticality carts (illustrated in following sections).
4. Fuel storage racks are clearly labeled and provide positive geometric control of spacing between M.S.Q. units stored. Each storage space in the racks is considered safe for one M.S.Q. of fuel material or assemblies stored.

ON WORKING DRAWING SUBMITTAL
 SECTION 29-0000-0000-0000
 P.O. BOX 100, BIRMINGHAM, AL 35202

73-Y-297800-MPT

NAME AND IDENTITY

ALL ITEMS

April 8, 1964

SERIAL NUMBER OF PART COVERED BY THIS REQ.

DATE AND AS SHOWN ATTACHED

FOR COMMENT

DISCUSS THE DIFFERENCE IN CLOTH WEAVING

COVERED BY 481A. THE 100% COVERAGE ON THE end channel of Type 1 subassembly
 and 100% COVERAGE ON the Type 1 subassembly is standard clusters.

THE 100% COVERAGE ON THE end channel and clusters the coverage obtained. In addition, a
 100% cover will be placed through to ensure no coverage is visible on the cloth.

ATTACHED SUBMITTAL Tempora/Tempa - AL 10/297800:481 & MCR:297800:481

CONCERN: Submitter's request and will make the end channel making 95% coverage impossible.
 Submitter's trial was the same as methods used in peripheral. See attachment for
 current coverage obtained in assembly of 481.

THIS CHANGE WILL NOT AFFECT CONTRACT PRICE & DELIVERY.

THIS REQ IS NOT CONFIDENTIAL PROPRIETARY INFORMATION AND
 MAY BE DISCLOSED TO OTHER CONCERNED.

TITLE AND DEPARTMENT

Senior Process Engineer

DATE

DISPOSITION

COMMITTEE A-

See attached comments.

COMMENTS

RECEIVED

APR 20 1964

See above comment.

By J.W. ROSS

THIS REQ IS AN OFFICIAL DOCUMENT WITH AGENCY OF THE PURCHASING AGENCY AND NEED NOT BE FOLLOWED BY A CHANGE
 NOTICE IN THE PURCHASING ORDER.

ENDORSED BY:

FORWARDED TO:

MR. J.W. ROSS

NC 5

On [REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]
[REDACTED] [REDACTED] [REDACTED]

72-1-297800-MPT

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

DATE 11/1/80 BY [REDACTED]

CLASSIFIED BY [REDACTED]

EXEMPT FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

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EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

RECEIVED

JUL 1 1964

ROSS

FILE AND DEPARTMENT
[REDACTED]
[REDACTED]

11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

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EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

DATE 11/1/80 BY [REDACTED]

EXEMPTION CODE [REDACTED]

THIS COPY IS TO BE DESTROYED WHEN ORDERED BY THE COMMISSIONER AND NOT BE FOLLOWED BY A CHANGE
OF THE ORIGINAL COPY.

AUTHORIZED BY:

[Signature]
DATE 11/1/80

NO. 297800:542

NC 5



[REDACTED]
METALS & CONTROLS INC. 34 FOREST ST. • ATTLEBORO, MASS. • CASTLE 2-2800

A CORPORATE DIVISION OF TEXAS INSTRUMENTS INCORPORATED

April 27, 1962

File: WAPD-203

Mr. J. A. Spangler
Westinghouse Electric Corp.
Bettis Plant - Bettis Site
P. O. Box 1468
Pittsburgh 30, Pa.

Subject: Purchase Order 73-Y-291104-M-T

Dear Mr. Spangler:

Attached is the signed acknowledgment copy of the subject order. The order is being acknowledged with the following understandings:

1. The end product of the order specified under Sections I.C.1. and 2. will not be supplied if the order is terminated at no cost in accordance with Section III.C. In this event the only end product, and reports applicable thereto, will be those supplied under the order for [REDACTED]
2. The references to Inquiry JAS-Y-297300 in Section II.A. will also include any quotation revisions transmitted by M&C subsequent to that dated March 15, 1962.

We trust the understandings stated above are in agreement with the intent of the subject order, and we request your earliest written concurrence with this letter.

Sincerely yours,

George P. Howland
Manager, Navy Nuclear Products

RLC/poc
Attach.



BETTIS ATOM POWER LABORATORY

MAIL & P. O. BOX 1468, PITTSBURGH 30, PA.

PAY

447 #00167, [REDACTED]

(INVOICE IN DUPLICATE)
Attn: Accounting Dept.

DATE

4/16/62

ORDER NO.

73-Y-291104-M-T

SPECIAL INSTRUCTIONS

ORDER
PLACED
WITHMETALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.

PLEASE SUPPLY THE FOLLOWING.

ITEM NO.	QUANTITY	DESCRIPTION (NAME OF PART, STYLE NO., DWG. & ITEM, P. D. SPEC., ETC.)	UNIT PRICE	TOTAL PRICE
		PERFORM THE DEVELOPMENTAL WORK SPECIFIED IN ATTACHED PAGES 2 THROUGH 5 OF THIS PURCHASE ORDER.		

THIS ORDER 73-Y-291104-M-T WILL BE CANCELLED AT NO CHARGE IF AN ORDER IS PLACED WITH SELLER BASED ON HIS QUOTATIONS FOR INQUIRY JAS 297800.

DO-E-2

required by the provisions of DMS Reg. 1. You are applicable regulations and orders of EDA in obtaining controlled materials and other products and materials needed to fill this order.

\$45,545.00

MAXIMUM

ATTACHMENT (S)

SHALL APPLY IN THIS ORDER

F. O. S.		TRANSP. CHARGES (SEE INST. 3)	CASH TERMS	ADDRESS CORRESPONDENCE TO (BUYER)	
ATTLEBORO, MASS.		COLLECT-NT.ALLWD.	NET 30	J.A. SPANGLER/ASM L7	
SHIPPING DATE		SHIP VIA		AUTHORIZED BY (PURCHASING AGENT)	
60 DAYS A.R.O.				JOS. A. HEEKE, JR.	
A.E.C. OR NAVY CONTRACT NO.		DELIVER TO		DO NOT USE	
AT-11-1-GEN-14					
WRITTEN BY & DATE		DEPT. & BUDGET NO.		CHARGE NO.	COMM. CODE
				419333 (116C67)	FLNC

INSTRUCTIONS TO SUPPLIER

- ORDER IDENTIFICATION. Show our order number on all invoices, bills of lading, express receipts and manifests.
- SHIPPING NOTICE. Mail shipping notice for each shipment, on the day shipment is made, to Purchasing Department at above address giving our order number, contents of shipment, quantity and weight.
- PACKING LIST. Include packing list with all shipments, giving our order number, contents of shipment, quantity and weight.
- INVOICE. All invoices must carry certification by Seller that the goods or services covered by the invoice were produced in compliance with the Fair Labor Standards Act of 1938, as amended. Submit separate invoice for each shipment and/or each purchase order, showing shipment destination. If shipment is not to buying point provide one additional copy of invoice together with bill of lading or express receipt. In the event that invoicing is by a person other than the Seller, notify our Purchasing Department in writing.
- TRANSPORTATION CHARGE. (a) Ship collect when transportation charges are chargeable to Buyer. Prepay transportation charges when chargeable to Seller. (b) Deduct from your invoice any partial transportation costs to be paid by Buyer which are chargeable to Seller. (c) Attach receipted transportation bill to invoice when prepaid costs are chargeable to Buyer. (d) When charges to be borne by the Buyer are dependent upon released value, Seller must declare shipment at the maximum value for the lowest rate. Any expenditures for insurance must be borne by the Seller.
- ROUTING. If not specified, Buyer reserves the right to furnish routing instructions later.
- TERMS. Subject to terms and conditions, specifications, and drawings referred to herein and/or attached hereto.

SUPPLIER'S ORDER NO.

WAPD 203

WILL SHIP

FROM

ACKNOWLEDGED AND ACCEPTED BY

[Signature] 4/26/62
SIGNED FOR SUPPLIER DATE

[Signature]
dated 4/26/62.

5/29/62

X

L-73-Y-297800-M-01

73-Y-297800-M

WESTINGHOUSE ELECTRIC CORPORATION
BETTIS ATOMIC POWER LABORATORY
NAVAL CORE PROCUREMENT
P.O. BOX 1468
PITTSBURGH 30, PA.

METALS AND CONTROLS, INC.
NUCLEAR DIVISION
ATTLEBORO, MASSACHUSETTS

DEST.

X

\$550.00

FOR RECORD PURPOSES ONLY

PROPERTY SHIPPED TO SUPPLIER
FOR MFG. OF OTHER PROPERTY FOR
BAPL./MATL. ORIGINALLY SHIPPED
ON L-73-Y-291104-M-01.

25#

75#

3 COPIES OF VENDOR ANALYSES.

M. CARROLL/E. JUELL/E. FAZIO/
J. SPANGLER.

TITLE OF THE FOREGOING MATL.
SHALL REST IN THE NAME OF THE
U.S. GOVERNMENT.

AT-11-1-GEN-14.

M.J. CARROLL - NA.C. PROD.

J.A. SPANGLER/ASM

L7

G.G. RITTER/SUPVR.



Westinghouse Electric Corporation

Bettis Atomic Power Laboratory

Box 1468, Pittsburgh 30, Pa.

WAPD-NAC-PUR-105

April 17, 1962

*Approved 4/14/62
Kittow
Hamm*

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P. O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. D. D. Blumenstein

Dear Sir:

PURCHASE ORDER 73-Y-291104-MT

Purchase Order 73-Y-297800-MPT for [REDACTED] Spares has been forwarded to you with the recommendation that it be placed with Metals and Controls. Attached hereto is Purchase Order 73-Y-291104-MT for a maximum price of \$45,545, which Westinghouse recommends be placed with Metals and Controls. This order is for development work on [REDACTED] order. Upon placement of the [REDACTED] order, this development order will be cancelled at no cost to Westinghouse or the Government. M&C has agreed to extend their present [REDACTED] until April 19, 1962, at which time they will submit a revised proposal in response to an inquiry change now in their possession. All materials supplied for the proposed order shall be considered part of [REDACTED]

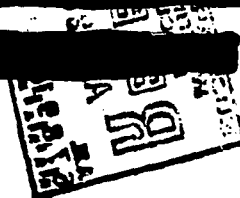
This order will allow M&C to begin development work necessary for the core order and consequently will shorten its delivery. The present core delivery [REDACTED] Changes and unforeseen delays are likely to lengthen this term, which has little allowance for unexpected problems. Since this development order does not constitute a full release, the core delivery improvement will not be equal to the full period of the development order. The improvement will be one-third the term of the development order.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



In the event the core order should not be placed with M&C, this order would be terminated and costs would be calculated on the basis of the latest audited M&C costing rates and adders, except that no profit would be allowed. In event of termination, M&C would submit a full engineering report on their development work.

The M&C proposal, Attachment 2, presents an estimate of the work to be accomplished, with a cost breakdown for each phase. However, through negotiation Westinghouse has eliminated those areas which are not wholly developmental in nature. The resulting breakdown supersedes that contained in M&C's proposal and is as follows:

Manufacturing	150 hrs. @ \$5.70	\$ 855
Quality Control	250 hrs. @ \$4.80	1,200
Engineering	2640 hrs. @ \$7.90	20,856
		22,911
D.E. and A.E. on Labor (42.6%)		9,760
Materials		10,594
D.E. and A.E. on Material (16.0%)		1,695
		44,960
Corporate G&A (1.3%)		585
		\$45,545
Total		

No alterations were made [REDACTED] except for a minor reduction in the material cost estimate. In the other two phases, all material, manufacturing and quality control costs were removed while all engineering remained unchanged. In the event of cancellation, costs up to the maximum of \$45,545 will be paid, based on the latest audited rates without profit. The pricing is therefore considered fair and reasonable.

The terms and conditions of the order are those negotiated for the core order, with minor adjustments to accommodate the limited scope of work. See paragraph II of 73-Y-291104-MT. The Bettis Contracts Section has reviewed the contract and concurred with it.

M&C's requested amounts of Westinghouse furnished materials were lowered during negotiations, and Westinghouse has on hand the amounts agreed upon and stated in the order. It also is understood that an allocation of zirconium chunklets from National Distillers and Chemical Corporation has been made available to M&C on the basis that neither the Government nor Westinghouse assumes any financial risk or obligation as a result of the allocation. The allocation is not a part of this order.

Since M&C is the only vendor under consideration [REDACTED] they are also a sole source for this order. Placement of this order with any other company would result in costs which would not be absorbed by the core order price, and the knowledge gained by the development work could not be utilized to the fullest extent in core fabrication.

[REDACTED]

Mr. D. D. Blumenstein
U. S. Atomic Energy Commission

-3-

WAFD-NAC-PUR-105

Written confirmation is requested for your previous oral approval to place
73-Y-291104-MT with Metals and Controls.

Very truly yours,

ORIGINAL SIGNED BY
J. A. HEEKE

Jos. A. Heeke, Jr., Purchasing Agent
Naval Cores Department

JAS/lft

Attachments:

- #1 - Purchase Order 73-Y-291104
- #2 - M&C Proposal

Distribution: Mr. K. W. Schwanekamp
Mr. E. T. Cox
Mr. P. F. Dandon
Mr. L. B. Prus
Mr. F. W. Hassett
Mr. J. E. Howell
Mr. E. L. Juell

COMMENTS OF U. S. ATOMIC ENERGY COMMISSION:

This confirms oral release given Mr. Heeke on 4/16/62

D. D. Blumenstein
Authorized Representative

4/25/62
Date

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE
6/20/63

THIS CHANGE NOTICE APPLIES TO:
PURCHASE ORDER NO. 73-Y-297800-MPT
DATED 5/16/62

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR *See Attached Letter*)

REFER TO P53-2 AND P54

CHANGE NOTICE NO. 114

1. THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS A RESULT OF THIS CHANGE NOTICE.
2. AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

3. REFER TO CHANGE NOTICE 102 WHICH INCORPORATED 01B5-5 INTO THE ORDER FOR MATERIAL ONLY. THAT DRAWING REVISION IS HEREBY FULLY INCORPORATED AND THE MASTER LIST OF DRAWINGS AND SPECS ATTACHMENT 4 TO THE ORDER, IS AMENDED ACCORDINGLY. THE ORDER PRICE IS INCREASED \$3,380 FOR THIS CHANGE.
4. SELLER SHALL PERFORM MACRO ETCH TESTING OF ALL CONSUTRODE MATERIAL IN HIS POSSESSION FOR USE ON THIS ORDER BY DECEMBER 20, 1962, AND WHICH MATERIAL HAD NOT YET BEEN MACRO ETCH TESTED BY SELLER. SELLER SHALL SUBMIT HIS TEST RESULTS TO WESTINGHOUSE WHICH RESULTS SHALL NOTE THE GRAIN SIZE OF MATERIAL TESTED. THE ORDER PRICE IS INCREASED \$1,266 FOR THIS CHANGE.

M&C NUCLEAR

JUN 25 1963

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR J.A. SPANGLER/BMG L7
ATTENTION OF:

BUYER

AUTHORIZED BY

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)

FROM

JOS. A. BECKE

RECEIVED & ACCEPTED BY

(SIGNED FOR SUPPLIER)

Bury
11/12



Westinghouse Electric Corporation

Scotts Atomic Power Laboratory

Box 1460, Pittsburgh 20, Pa.

WAPD-NAC-PA-3515

October 27, 1963

Metals & Controls
P. O. Box 898
Attleboro, Mass.

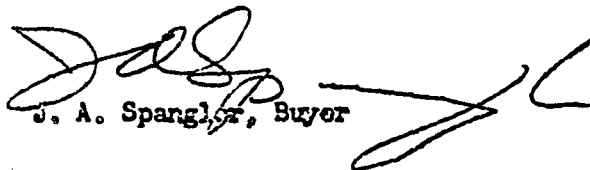
Attention: Mr. R. L. Churchill

Gentlemen:

On 10/1/63, you noted by TWX that the Zr transfer to
AT-36-1-98 was "presently being made". Is it complete?

Very truly yours,

A. Cavalcante, Jr., Supervisor
Naval Cores Procurement Dept.


J. A. Spangler, Buyer

/bk

cc: A. Cavalcante, Jr.

P/MLH

TV

ISATMPGH

DETAILS AND CONTROLS INC 15 617-222-1259

10-1-63 115PMEDT ATTL MASS

Burg-10/17

J SPANGLER BETTIS

REF ZIRC TRANSFER BACK TO AT /36-1/-98. TRANSFER PRESNENTLY BEING
MADE.

C STANTON

END MARSHA

PLS CORRECT EIGHTH WORD TO RD PRESENTLY OK TU\$\$\$

OK ENDQ00

BETTISATMPGH

Bug
10/16



Westinghouse Electric Corporation

Orville Atomic Power Laboratory Box 1468, Pittsburgh, Pa., Pa.

WAPD-DAC-PA-3458

September 16, 1963

Metals & Controls, Inc.
P.O. Box 898
Attleboro, Mass. 02703

Attention: Mr. C. Stanton

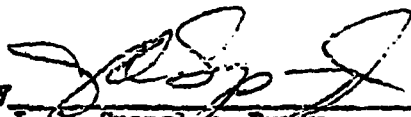
Reference: Your letter of May 1, 1963.

Gentlemen:

Have you transferred Zircaloy back to AT(36-1)-98? If not, when?

Very truly yours,

A. Cavalcante, Jr., Supervisor
Naval Cores Purchasing Department

By 
J. A. Spangler, Buyer

/lft

cc: R. L. Churchill
A. Cavalcante, Jr.

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTIC...

10/30/62

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

73-Y-297800-MP

DATED

5/16/6

METALS AND CONTROLS INC.
P.O. BOX 389
ATTLEBORO, MASS.

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR #8)

CHANGE NOTICE NO. 20

THE ORDER PRICE [REDACTED] DELIVERY DATE [REDACTED] ARE UNCHANGED
AS A RESULT OF THIS CHANGE NOTICE.

ARTICLE 46, COMMITMENT OF FUNDS, CONTAINED IN ATTACHMENT 1, GENERAL PROVISIONS,
IS DELETED. ALL REFERENCES IN THE ORDER TO ARTICLE 46 ARE DELETED.

ACKNOWLEDGMENT
FAILURE TO SIGN AND RETURN THIS ACKNOWLEDGMENT
WITHIN 10 DAYS AFTER DATE OF CHANGE NOTICE
MAY BE CAUSE FOR CANCELLATION

DO E2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

AUTHORIZED BY:

MARK FOR J.A. SPANGLER/MMP

L7

BUYER

XXXXXXXXXXXXX
PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)

3/15/64

FROM

Attleboro

ACKNOWLEDGED & ACCEPTED BY

J.L. Churchill

11/7/62

(SIGNED FOR SUPPLIER)

DATE

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

4/26/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

73-Y-297800-MPT

DATED

5/16/62

TO

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS.
ATTN: R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR

INT. NOTE:

NR APPROVAL 1#11798

REFER TO P-83.

CHANGE NOTICE NO. 79

THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS A RESULT OF THIS CHANGE
NOTICE.

THE FOLLOWING CHANGES ARE MADE TO ATTACHMENT 4, MASTER LIST OF DRAWINGS
AND SPECIFICATIONS TO THE ORDER:

ITEM	DRAWING	FROM REV.	TO REV.
B1, D1 SUPPORT NUT	935C081	3	4
B2, D2, D4 SUPPORT NUT	935C079	2	3
TYPE C POSITIONING PIN	910B485	1	2

AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----



DO E-2 APPLIES.

MARK FOR ATTENTION OF:

AUTHORIZED BY:

J.A. SPANGLER/BMG L7 BUYER

JOS. A. HEEKE, JR. PURCHASING AGENT

ORIGINATED BY & DEPT.		AEC OR NAVY CONTRACT NO.		BUDGET NO.	COMM. CODE
C.D. MALLOY NA.C.		AT-11-1-GEN-14		642	FLC
FUNDING NO.	CHARGE NO.	CURRENT FY + (INCREASE) - (DECREASE)	FUTURE FY + (INCREASE) - (DECREASE)	PREVIOUS AMOUNT BY CHARGE NO.	CURRENT AMOUNT BY CHARGE NO.
	116C067B01				
	117C067B01		401.00		
	1276 C				
	115C024E01				
	303C067E01				
TOTAL					

OFFICIAL USE ONLY

CHANGE NOTICE CHECK-OFF SHEET

TO ORDER TYPIST

☐ Type Immediately
☐ Sign Immediately
☐ Type 2 extra copies for AEC
☐ Ty. 6 extra copies for Navy
☐ Type _____ copies each for _____

☐ Drawings Attached for Navy _____ Vendor _____
☐ Copies of Specifications Attached
☐ Welding or Repair Procedure Attached
☐ Hold for Tags
☐ Central File Copy to: _____
☐ Special Instructions

HOLD _____

Do not date or sign, pending AEC approval.

Type 3 extra copies and return to buyer immediately.

☐ By your acknowledgement of this change notice, you agree that all changes in price or delivery which are required by this and all previous change notices have been incorporated in the revised price and delivery date established by this change notice; except for _____.

☒ There is no change in the ~~price, delivery or terms~~ of this order as a result of this change notice, ~~except as noted herein.~~

☒ As a result of this change notice, the price of the order is changed as follows:

PREVIOUS PURCHASE ORDER TOTAL	_____		whichever is applicable)
INCREASE PER THIS CHANGE NOTICE	_____		
DECREASE PER THIS CHANGE NOTICE	_____		
NEW PURCHASE ORDER TOTAL	_____		



OFFICIAL USE ONLY

FROM Westinghouse Electric Corporation

AT

DATE OF
CHANGE NOTICE

4/26/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

734297800 MAT 51

TO

Metals & Controls, Inc
PO Box 898
Attleboro, Mass
Attn: R L Churchill

BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY DATE WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR

CHANGE NOTICE NO. 79 *Int Note*
NR Approval: I # 11798

Refer to P83.

~~Attaches~~ The following changes are made to
~~the~~ Attachment 4, Master List of ~~Order~~ Drawings
and Specifications, to the order:

MARK FOR ATTENTION OF:

J A Spang BUYER

AUTHORIZED BY:

PURCHASING

OFFICIAL USE ONLY

ORIGINATED BY & DEPT.		AEC OR NAVY CONTRACT NO.		BUDGET NO.	CCMA CODE
<i>CD Mallory Jr & Co Eng</i>		<i>AT 11-1-GEN-14</i>		<i>642</i>	<i>FLC</i>
FUNDING NO.	CHARGE NO.	CURRENT FY + (INCREASE) - (DECREASE)	FUTURE FY + (INCREASE) - (DECREASE)	PREVIOUS AMOUNT BY CHARGE NO.	CURRENT AMOUNT BY CHARGE NO.
	<i>116 C067 B01</i>				
	<i>117 C067 B01</i>		<i>+ \$401</i>		
	<i>1276 C</i>				
	<i>115 C024 E01</i>				
	<i>303 C067 E01</i>				
TOTAL					

Next
part of
CN

P 83

Price Calculation

$$4 \text{ Eng Hrs @ } 7.35 = 29$$

$$40.5\% = 12$$

$$\text{Subc Cost } \underline{\hspace{1cm}} = 272$$

$$16\% = \underline{44}$$

$$357$$

$$\text{G\&A } 1.1 = \underline{4}$$

$$361$$

$$\text{Profit } \underline{40}$$

$$401$$

COND MESSAGE

ATTN J A SPANGLER

TODD

5-21

copies

5-18-62

REOUR PHONECON THIS DATE, M AND C REQUESTS ALLOCATION OF 18,000 LBS OF
ZR SPONGE FOR MAY AND 24,000 LBS FOR JUNE UNDER ORDER 73-Y-297800-MPT.
M AND C OR VENDOR WILL PURCHASE AT M AND C FINANCIAL RISK IN THE EVENT
ORDER 73-Y-297800-MPT IS NOT ACKNOWLEDGED.

R L CHURCHILL
M AND C NUCLEAR PRODUCTS
END PLS ACK

SSS

MV

PG OPR PG OPR

11
44

GA WITH MCK 957

GA WITH MCK 957

PG OPR PG OPR

GA WITH MCK 957

MIN PLS

MIN

444/

WIRE MESSAGE

WESTINGHOUSE FORM 10-B



MAKE IT SHORT!

TO	MR. E. L. Churchill	DATE August 20, 1942	TIME
	WORKS. DIVISION, D.O./COMPANY Metals & Controls Dept.		
	DEPT./ADDRESS P. O. Box 896 Attleboro, Massachusetts		
	RE: Conference of 8/16 and 8/17 M & C shall out Westinghouse furnished [redacted] excess to Pettis. Mark it Purchase Order T3-I-29/500-WPT, Attn: C. J. Burkard, [redacted] cc: C. J. Burkard G. G. Ritter J. A. Hooker, Jr. E. L. Juall		
SIGNED	DEPT.	BUDGET	
J. A. Spangler	Naval Corps Procurement	61	

WESTINGHOUSE DETTUS C. PLC

THIS IS C AND C NUCLEAR ATTN: MS 4/16/68 4/45 PM

ATTN: JOSEPH WEEKE JR

CONFIRMING THIS MORNINGS TELECON

OUR MARCH 15, 1968 REVISION TO QUOTATION IN RESPONSE TO INQUIRY
JAS-Y-297800 IS HEREBY EXTENDED TO THE TIME OF WESTINGHOUSE RECEIPT
OF DEV C QUOTATION PRESENTLY SCHEDULED FOR DELIVERY ON APRIL 19, 1968.

SEPARATE SUBJECT

W AND C WILL ACCEPT INTERIM PURCHASE ORDER FOR REDUCED SCOPE OF WORK
AS EXPLAINED BY TELEPHONE TO G P HOWLAND BY G RITTER ON APRIL 16, 1968
IN LIEU OF OUR PROPOSAL DATED 3/27/68. IT IS UNDERSTOOD THAT THIS
ORDER IS GOOD FOR 60 DAYS AND THAT MAXIMUM IMPROVEMENT QUOTED IN
DELIVERY DATE OF CORE TO EXXXX WESTINGHOUSE WILL BE 30 DAYS.

W AND C WILL ACCEPT ALLOCATION NOTICE FOR 10,000 LBS OF AMI ZIRCONIUM
SPONGE MEETING CONTRACT REQUIREMENTS. W AND C OR VENDOR WILL PURCHASE
AT W AND C FINANCIAL RISK IN THE EVENT ANTICIPATED CONTRACT IS NOT
AWARDED.

W AND C NUCLEAR PRODUCTS G P HOWLAND

END PLC ACK CERY

MSG RECEIVED 4.55 PM EST ELC TUN

Covered From M & C

METALS & CONTROLS INC 13 617-222-1239 10-12-62 350P EDT
J A SPANGLER BETTIS

M&C IS STILL AWAITING SHIPPING INSTRUCTIONS [REDACTED]
EARLIER. PLS ADV BY RETURN WIRE WHEN WE CAN EXPECT TO REMOVE IT FROM
OUR INVENTORY

R L CHURCHILL

MSG NO. 2

J A SPANGLER

ALSO IN CONFIRMATION OF OUR RECENT CONVERSATIONS M&C IS STILL AWAITING
FISCAL COVERAGE FOR THE PROCUREMENT OF REPLACEMENT SHROUD MATERIAL PER
MEETINGS BETWEEN MESSRS ANTHONY HOWLAND, SCHWANERKAMP & HEEKE ON 9-20-62

R L CHURCHILL

MSG NO. 3

J A SPANGLER

REOUR RECENT TWX,S AND CONVERSATIONS LACK OF BETTIS FURNISHED ITEM
1.1.1 THREATENS TO DELAY PRODUCTION. UNLESS THE REMAINING 3.7 KGS
ARE RECD BY 330 PM ON 10-15-62 M&C WILL INCUR ADDED COSTS OR BE DELAYED
IN SCHEDULE

R L CHURCHILL

END LIL

Cores to m & c
V
M AND C NUCLEAR GA. LSWESTINGHOUSE BETTIS ATOMIC POWER LAB.
MIN PLS
Q
WILL START OVER

WESTINGHOUSE BETTIS ATOMIC POWER LAB.
JAS 283641-1

MCKEESPORT, PA.
OCTOBER 10, 1962

MR. G. P. HOWLAND
METALS AND CONTROLS, INC.
ATTLEBORO, MASS.

CC TO MR. R. L. CHURCHILL

RE YOUR TWX TO HEEKE 10/4. SCREENING COST OF \$780 FOR 325 POUNDS OF

J. A. SPANGLER, BUYER

NAVAL CORES PROCUREMENT DEPT.

MESSAGE NO. 2

MR. R. L. CHURCHILL
METALS AND CONTROLS, INC.
ATTLEBORO, MASS

OCTOBER 10, 1962

CC TO MR. J. E. HOWELL

AS P-24, QUOTE COST OF REPLACING 1.7.20. NOTE SIZE OF PIECE TO BE
PROCURED. IMMEDIATE ANSWER REQUESTED.

J. A. SPANGLER, BUYER
NAVAL CORES PROCUREMENT DEPT.
WESTINGHOUSE BETTIS ATOMIC POWER LAB.

END PLS ACK

END

Covers From M & C

ATTN J A SPANGLER

CC JOHN HOWELL AT M AND C

IN ACCORDANCE WITH MINUTES OF THIS EXX WEEKS MEETING, M AND C WILL QUOTE PROPOSED CHANGE P-20 ON NOVEMBER 9, 1962. PRESENT INDICATIONS ARE THAT C.E. AND M AND C PROCUREMENT WILL BE TIED UP ON PREVIOUS CHANGES FOR THE NEXT COUPLE OF WEEKS, SO THIS CHANGE MUST FOLLOW IN LINE

R L CHURCHILL

ATTN J A SPANGLER

IN ACCORDANCE WITH YOUR RECENT REQUEST, M AND C HAS REJECTED MATERIAL IEXX ITEM 1.7.43 ON THE BASIS OF THICKNESS BEING $1 \frac{7}{16}$ " IN LIEU OF THE REQUIRED NOMINAL OF $1 \frac{1}{2}$ ". THIS DEFECT PLUS THE $1 \frac{1}{16}$ " TO $3 \frac{1}{16}$ " OUT OF FLAT AND UNFAVORABLE SURFACE TXX CONDITIONS MAKE SPECIAL HANDLING NECESSARY IN ORDER TO MAKE THE END PRODUCT. THEREFORE, WE AGREED TO ACCEPT 1.7.43 ONLY ON A SPECIAL HANDLING BASIS WITH ADDED REIMBURSEMENT

R L CHURCHILL

ATTN J A SPANGLER

CONFIRMING CONVERSATION YESTERDAY, M AND C RECEIVED [REDACTED] RATHER THAN THE 76 NOTED IN MY LETTER OF 9/20/62. THE FINAL PRICE FOR SPECIAL HANDLING WAS AGREED UPON THIS AM AS BEING \$2,954.

R L CHURCHILL

ATTN J A SPANGLER

CONFIRMING CONVERSATION OF 10/3, M AND C HAS SCHEDULED PERIFPHEXXX PERIPHERAL BARS [REDACTED] BASED ON THE AGREEMENTS CONFIRMED BY OUR TWX DATED 7/3/62 TO YOU. WE PRESUME YOU ARE PLANNING TO MODIFY THE ORDER IN ACCORDANCE WITH OUR AGREEMENT

R L CHURCHILL
M AND C NUCLEAR

*Ritter Kost note -
check machine if we will
proceed to clear this
w/ Mr. Heeke 7/31*

T-7-15
R



Westinghouse
WAFD-NAC-(PH)-127

BETTIS ATOMIC POWER LABORATORY
Bettis - SMR Building
Contracts and Business Systems

Date: May 17, 1962
From: BAFL - G Bldg. West Annex
Subject: Purchase Order 73-Y-297800
[Redacted]

Mr. B. E. Kost, Manager

cc: Mr. W. A. Brecht
Mr. P. F. Dundon
Mr. G. G. Ritter
Mr. K. W. Schwaneckamp

① Heeke *7/3*
*Contract funds, though
not necessarily control budgets, are
now adequate to fund this option.*
② Kost

During recent negotiations concerning placement of a purchase order for the subject core, PNRO identified a problem relative to availability of funds and requested Bettis incorporate a separate article "COMMITMENT OF FUNDS" into the general provisions.

As a result of subsequent discussions between your office and Naval Cores Department representatives, you identified that the article outlined below was acceptable to Bettis for inclusion in the core contract and did not jeopardize our corporate position with respect to the difference between the dollar limit of Westinghouse's legal obligation identified therein, and the actual price of the proposed order. The selected supplier accepted the article proposed by Westinghouse and the order was placed on May 16, 1962, with the following inclusion:

COMMITMENT OF FUNDS

Until such commitment is increased, the maximum legal obligation of Westinghouse with respect to payments due to Seller under this order, including any amounts payable under the provisions of Article 11 - Payments and Article 16 - Termination or otherwise, shall be limited to \$5,000,000. Such obligation of Westinghouse shall be increased to the total price of this order at such time as funds are made available by the Commission and obligated under Contract No. AT-11-1-GEN-14 between Westinghouse and the Commission. In any event such obligation of Westinghouse under this order shall be increased to the total price of this order on or before October 31, 1962.

The above confirms our telecon of May 16, 1962.

Contracts & Business Systems		
RECEIVED		
Action	File	Return
Destroy	Date	Comment
Route MAY 17 1962		
DILL	RODGERS	
MURPHY	TURNER	
RICHARDSON	UMBERGER	

[Signature]
Joseph A. Heeke, Jr., Purchasing Agent
Naval Cores Department
Ext. 6269-6859

WAFD-V(C)-825

Bettis Atomic Power Laboratory

May 15, 1962

BETTIS ATOMIC POWER LABORATORY

Mr. J. A. Hooks, Jr.
Purchasing Agent
Naval Corps Department

Purchase Order B-I-297800

cc: Mr. W. A. Brocht
Mr. P. F. Dundon
Mr. G. O. Ritter
Mr. E. W. Schenckamp

Your letter of May 17, 1962 confirming our discussions of the "COMMITMENT OF FUNDS" article is accurate, but not quite complete.

You will recall that my concurrence with the clause was based on the understanding that your PUR letter will obtain a Commission commitment that its failure to provide Westinghouse with the additional funds required by October 31 would constitute AEC approval for termination of the order. It is also important to recognize that the specific written AEC directive to use the clause binds the Commission to reimburse any resulting costs to Westinghouse.

For record purposes, the effect of the clause is:

1. From date of placement through October 31, 1962, the maximum Westinghouse obligation to WAF will be \$5,000,000.
2. At any time during this period, Westinghouse has the right to terminate, with the ultimate cost to be determined under the provisions of the termination article, but not to exceed \$5,000,000. This, of course, means that if on October 31 the additional funds are not available termination would be a fully available recourse and no jeopardy to Westinghouse would exist.
3. The principal importance of the last sentence is to establish the latest date by which the order must be increased to the full amount in order to retain price and delivery specified in the order.

This is consistent with the interpretation of the AEC personnel involved.

Original Signed by
J. E. KOST

Bert L. Kost, Manager
Contracts and Business Systems



Westinghouse Electric Corporation

Bellis Atomic Power Laboratory

Box 1468, Pittsburgh 22, Pa.

LAPD-IAC-PIT-121

May 17, 1962

Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P. O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. R. D. Long

Subject: Allocation of Zirconium Sponge for
Westinghouse Purchase Order 73-Y-297800-MT

Gentlemen:

You are requested to allocate 42,000 pounds of zirconium sponge to Metals and Controls from National Distillers and Chemical Corporation. The allocation should be for 18,000 pounds from May, 1962 production and 24,000 pounds from June, 1962 production. Both amounts are for use on Westinghouse Purchase Order 73-Y-297800-MT.

Allocation is requested by May 22, 1962.

Very truly yours,

G. G. Ritter, Supervisor
Naval Core Procurement Dept.

JAS/ab

cc: D. D. Blumenstein
H. H. Hoffman
L. B. Prus
B. G. Fieck
K. W. Schwarzenamp

J. A. Hecke, Jr.
J. E. Howell
E. L. Juell
F. W. Hasset
P. F. Dandon



Westinghouse

WAPD-NAC-PA-861

Date. May 22, 1962

From BAPL - G Bldg. - West Annex

Subject [REDACTED]

BETTIS ATOMIC POWER LABORATORY
G Building - West Annex

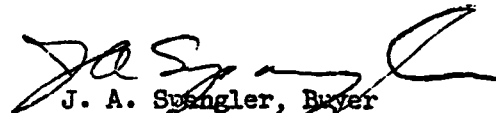
Mr. B. G. Rieck, Supervisor
Planning & Control
Naval Cores Department

cc: C. J. Burkard
E. L. Juell
R. F. Gessner
G. G. Ritter
F. R. Quill

Please direct [REDACTED] from Weh Chang, the producer, to Metals and Controls Nuclear, Attleboro, Mass., Attn: R. L. Churchill. Also, insure that all shipping papers, MTC's, and billings read, "For use on Westinghouse Purchase Order 73-Y-297800-MPT".

Shipment should be made during June, and you are reminded that it is a Bettis goal to cost this material this fiscal year.

Mr. Burkard is the Bettis coordinator. Mr. Quill handles the order in the AEC.


J. A. Spangler, Buyer
Naval Cores Procurement Dept.

/Lrt



Westinghouse WAPD-NAC-PA-1299

Date October 9, 1962

From BAPL - G Bldg. - West Annex

Subject

BETHE'S ATOMIC POWER LABORATORY
G Bldg. - East Annex

Mr. D. J. Fontanese
Core Materials & Control
Naval Cores Department

cc: E. L. Juell
C. D. Malloy

[REDACTED]


J. A. Spangler, Buyer
Naval Cores Procurement Department

/lft

*Car in
from
AEC*



to Bureau

Westinghouse Electric Corporation

Bettis Atomic Power Laboratory

Box 1468, Pittsburgh 30, Pa.

WAPD-NAC-PUR-200

October 30, 1962

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P.O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. D. D. Blumenstein

Subject: Use of Zirconium by Metals & Controls, Inc.
on Purchase Order 73-Y-297800-MPT

Dear Sir:

Metals & Controls has requested the allocation of 863 pounds of RMI zirconium sponge contained in 1000 pounds of Zircaloy, heat number 34062, as a part of the allocation on Purchase Order 73-Y-297800-MPT. The request for technical permission to use this material is contained in Approval Request MC:297800:63. You are requested to allocate this material noted above.

M&C has also requested technical permission to use 2349 pounds of zirconium sponge, contained in 2763 pounds of Zircaloy, in Approval Request MC:297800:71. M&C has agreed to count this as a part of their allocation, with the reservation that any of the material returned to their supplier should not be so counted. Westinghouse concurs with this and has so noted this on the Approval Request.

Your concurrence with the previously noted course of action is requested by approval of the Approval Requests concerned and by notification to RMI of the allocation of the 863 pounds of material referenced above.

Very truly yours,

A. Cavalcante ✓
A. Cavalcante, Jr., Supervisor
Naval Cores Procurement Department

JAS/lft

cc: H. H. Hoffman
K. W. Schwaneckamp
H. B. Hunter
H. M. Schadel, Jr.
P. F. Dundon
L. B. Prus
J. A. Heeke, Jr.

*11/4/62 The AR's have been approved and 22124
will be allocated for pick-up in idle by M&C, J.
approval based on this PUR plan PUR-2004
and PUR-2005*

David H. Blumenstein

*Conceded
to
A & C*

WAPD-NAC-PUR-200-B

November 29, 1962

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P.O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. D. D. Blumenstein

Subject: Use of Zirconium by Metals & Controls, Inc.
on Purchase Order 73-Y-297800-MPT

Dear Sir:

WAPD-NAC-PUR-200 and 200-A requested approval of the use of certain Zircaloy materials by Metals & Controls on Purchase Order 73-Y-297800-MPT. Metals & Controls has advised by TWX (Attachment #1) that they will pick up 2349 pounds of zirconium under their allocation for this purchase order for delivery in December to be used by Wah Chang to replace the material noted on AR MC:297800:71. Metals & Controls acceptance of this arrangement assures that the Commission will not have to pick up zirconium sponges which would otherwise have been used under allocation on this purchase order.

Your approval of this arrangement is requested by approval of the subject AR. You are also requested to schedule the 2349 pound sponge allocation for December.

Very truly yours,



A. Cavalcante, Jr., Supervisor
Naval Core Procurement Department

JAS/jc

Attachment #1 - TWX from Metals & Controls

cc: H. H. Hoffman
K. W. Schwaneckamp
H. B. Hunter
H. M. Schadel, Jr.
P. F. Dundon
L. B. Prus
J. A. Heaks, Jr.

Waddinghouse

Date: November 15, 1962

BETTIS ATOMIC POWER LABORATORY

Mr. J. A. Heske
Purchasing Agent
Naval Cores

Analytical Chemistry

Shipment of Fuel Materials
to Prototype Vendors

cc: Mr. E. J. Kreh, Jr.
Mr. K. W. Schwankamp
Mr. P. A. Halpine
Dr. B. G. Schultz
Mr. F. L. Shubert
Mr. P. Ruzicka
Mr. L. B. Frus

Please inform Dr. Ewing at Babcock & Wilcox and Mr. Murphy at M & C that standard samples of prototype raw fuel materials are being sent to them for their use in helping them establish methods for these materials. The samples are being shipped according to Bettis Accountability procedures to their attention.

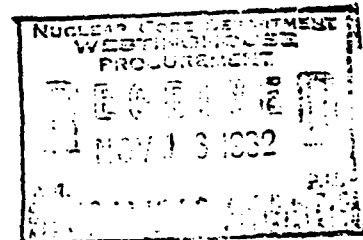
The Bettis identification for these samples are:

20081-1
20081-11

Since the samples are in very limited supply, I suggest that emphasis be placed on the fact that these samples are standards and are not to be used by them as daily control samples. As soon as they collect their chemical analysis data it is requested that they transmit it to Bettis for evaluation.

T. C. Bryson, Manager
Analytical Chemistry
Plant Technology

/sr



*Cover
from other
Bettis*



Westinghouse

WAPD-NAC-PM-540

Date October 24, 1962

From BAPL - SMR Building

Subject Shipments of Fuel Material
to M & C and B & W

BETTIS ATOMIC POWER LABORATORY
NAC Core Materials Procurement

ALL BUYERS

cc: Messrs. J. A. Heeks, Jr.
B. G. Rieck
L. B. Prus
F. W. Hassett (3)
A. Cavalcante, Jr. (5)
P. D. Halpine
R. Cuteri

Requests from fuel and powder suppliers for authorization to deviate from the contractual ordering data on production material will henceforth be subject to core contractor review. Proceed as follows:

- A. Vendor forms (DNDR's, AR's, etc.) will be routed through Bettis and the Commission as at present. Each department involved will approve, approve conditionally, or disapprove as in the past. Their approvals will not be conditional on acceptance by the core vendor.
- B. Purchasing will continue to follow the processing of these vendor requests through all departments, and to expedite as required. You will maintain a master record on each order involving production [REDACTED] status of all vendor forms received, and a master file of approved copies.
- C. Handle in-process requests (DNDR's or other submittals requiring Westinghouse action prior to the completion of manufacture and test of the product) as follows:

Requests which have been disapproved

These will be signed by me and forwarded to the material supplier as in the past.

Requests approved conditionally or unconditionally

1. Prepare a Core Vendor Approval Record (form attached) in six copies (three copies when you determine that only one core contractor is involved).

2. Transmit three copies to each core contract buyer with the vendor request and record the transmittal in your master record.
 3. The core contract buyer will have all three copies of the Approval Record reviewed and executed by the core contractor; one copy will be retained by the core contractor, one by the core contract buyer, and one with your vendor request will be returned to you.
 4. I will review the Approval Record and sign the vendor request.
 5. File the Approval Record and distribute the executed vendor request.
- D. Vendor approvals on final product will be processed as in 1 - 3 above.

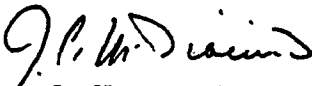
Exception: with the concurrence of the Purchasing Agent, to permit expedited processing, this procedure may be bypassed in certain cases. Vendor requests which have been approved or conditionally approved by the cognizant Bettis activities, and which must be transmitted at once, will be conditionally approved by me pending acceptance by the core contractor. In such cases, type the following on the form above the space for my signature.

Approval of this Request by Westinghouse Electric Corporation shall be conditional upon its approval by the Westinghouse subcontractor to whom the material will be supplied.

In such cases, Navy Inspection will certify conditional on acceptance at destination, and your supplier is to ship on that condition.

- E. You will accept final instructions for shipment [REDACTED] only if received in writing from Mr. Rieck or his alternate in Naval Cores Production. It will be understood by Purchasing that such instructions constitute acceptance of both the material and the data applicable to it, either by Bettis (for shipments to Bettis) or by Bettis and the core vendors (for shipment to core vendor). The buyer will then release the shipment.

Under no circumstances, except with my prior approval, are core materials, which are being procured from materials suppliers, to be shipped to the core contractors or their subcontractors for core components unless complete material certifications are available to permit unconditional acceptance; at least one copy of all supplier certifications must have been issued to the core contractor prior to the shipment or must accompany the materials shipment.


J. C. McDiarmid, Supervisor
Naval Cores Procurement Department

/am

CORE VENDOR APPROVAL RECORD

Vendor Request (Form & No.) _____
Dated: _____
Type Of Material: _____
Order No. For Material: _____
Material Supplier: _____

FROM: Mr. _____, Westinghouse Core Materials Procurement. Date: _____

ROUTE TO: Mr. _____, Westinghouse Core Contractor Procurement (3)

Attached for transmittal to core vendor.

ROUTE TO: Mr. _____, _____ (3) Date: _____
(Core Contractor)

Attached transmitted for your concurrence. Please execute
and return within three working days.

ROUTE TO: Mr. _____, Westinghouse Core Contractor Procurement (2) Date: _____

In the event the subject material is furnished to this
company for use under the purchase order noted below,
it will be accepted with the deviation referred to herein.

Company: _____ Order No. 73-Y- _____

By: _____ Title: _____

ROUTE TO: Mr. _____, Westinghouse Core Materials Procurement (1) Date: _____

This will confirm core vendor acceptance of the attached.

**NUCLEAR PRODUCTS DIVISION
METALS & CONTROLS CORPORATION**

STANDARD OPERATING PROCEDURE

PAGE 1 OF 2		NO. 583-80-01
SUBJECT HEALTH AND SAFETY PROCEDURE FIRE PROTECTION		DATE Nov. 4, 1957 SUPERSEDES
PREPARED BY P. Loysen	DEPARTMENT(S) AFFECTED All	APPROVED AUTHORIZED  General Manager

I. GENERAL.

Because of the value of the materials which are handled in the plant, and the possible serious effects which a fire could cause, great care must be taken at all times to eliminate or avoid conditions which could lead to a fire.

II. PROCEDURES.

A. The following general procedures shall be in effect:

1. No smoking shall be permitted in any contaminated area, or any area where pyrophoric materials are being handled at any time except where posted.
2. Finely divided, and thin gauge, pyrophoric materials shall be handled and stored under oil or water whenever possible.
3. Flameproof, or fire-resistant packing, storing and wrapping materials shall be used whenever possible; especially in the uranium storage vault.
4. Combustible waste shall be deposited in covered steel drums which are emptied routinely.
5. Flammable liquid shall be stored only in locations approved by Health and Safety. Dispensing of flammable liquid shall be done only by means of safety cans and use of flammable liquid shall be made only in approved containers or by approved methods. No more than one or two days' requirement shall be kept in the area of use.
6. The handling of zirconium and its alloys shall be done in accordance with the recommendations of Safe Handling of Zirconium and Its Alloys in Machining Operations, Appendix "B."
7. Each individual shall be responsible for operating equipment and performing operations in such a manner as to minimize the possibility of creating a fire.

Special instructions may be required for the operation of certain equipment and the performance of certain operations so as to minimize the possibility of creating a fire. This information shall be included in Standard Instructions or posted at the area of operation.

B. If a fire should occur, certain first aid fire-fighting equipment is available. This consists of:

1. Strategically located carts equipped with Ansul dry chemical or Met-L-X

NUCLEAR PRODUCTS DIVISION
METALS & CONTROLS CORPORATION

STANDARD OPERATING PROCEDURE

PAGE	NO.
2 OF 2	583-80-01

fire extinguishers, shovels, cans of G1 powder, metal shears and AEC type Multi-Service Respirators. In addition, a 350 pound dry chemical extinguisher is stationed near the horizontal extrusion press, primarily for fighting a pressure fire from a leak in the press oil storage tank, but also for backing up the fighting of a fire being fought elsewhere in the plant.

2. Carbon dioxide fire extinguishers are mounted on the walls in various locations throughout the plant.
3. Water and pyrene fire extinguishers mounted on the walls in certain areas susceptible only to Class "A" type fires.

Although not a first aid measure, the Nuclear Products building is sprinklered except for certain areas not suitable for this type of protection.

- C. If a fire should occur and it is apparent to the operator involved that it can be controlled quickly and easily by the use of the extinguishers present, it shall be his duty and that of any other nearby workers to deal with the situation immediately.

A complete treatment of fire extinguishing is taken up in the section on Emergency Procedures.

- D. In order to insure that the first aid fire-fighting equipment is maintained in proper operating condition, each cart shall be inspected for a full complement of equipment and each extinguisher inspected for full charge on a monthly schedule by the Health and Safety Inspector. All discharged extinguishers shall be sent to Health and Safety for recharging immediately after use - not replaced at its station.

PAGE 1 of 2		NO. 582-40-04
SUBJECT HEALTH - PHYSICS		DATE May 3, 1961
PROCEDURE PROTECTIVE CLOTHING AND EQUIPMENT		SUPERSEDES 582-40-03
PREPARED BY P. Duff	DEPARTMENT(S) AFFECTED All	APPROVED 1 AUTHORIZED <i>G. L. Williams</i> G. L. Williams Product Group Manager

I. GENERAL

Protective clothing shall be provided for employees in all areas where the possibility of contamination of personal clothing exists, where personal clothing is likely to be damaged by acid or other materials, or where required by product cleanliness standards.

II. REGULATIONS

A. The following regulations apply to the wearing and use of protective clothing in the fuel manufacturing area (FMA).

1. All persons working full time, spending more than two hours at a time, or performing work which is likely to contaminate personal clothing in the FMA, shall remove and leave their personal clothing in the clean locker room, walk to the contaminated locker room, and don their protective clothing and shoes.
2. People in Category 1 who wish to leave the FMA, shall leave their protective clothing and shoes in a contaminated locker, shower, and put on their street clothing and shoes in the clean locker room. The only exception to this shall be people transporting fuel [REDACTED] coats and brown shoe covers, provided for this purpose at Guard Post No. 2, over their protective clothing and shoes.
3. Prior to entering the lunchroom in the FMA, a person shall put on brown shoe covers, wash his hands, and put on a white lab coat. These coats and shoe covers shall be returned to their racks after each use, and shall be replaced with clean ones at least twice a week.
4. People working for less than two hours and not performing work which is likely to contaminate their personal clothing, shall don shoe covers and gray lab coats at the Smidgen Room. Upon leaving, they shall return coats and shoe covers to their respective racks and wash their hands. Vault supervisors shall wear synthetic cover-alls over their personal clothing rather than the gray lab coats.
5. Prior to entering the FMA Foremen's Office, brown shoe covers shall be put on over protective shoes or shoe covers.

B. The following regulations apply to the wearing and use of protective clothing, in the scrap and salvage area.

1. People working full time in the scrap and salvage area shall remove their personal clothing, put it in a clean locker, and don protective clothing and shoes. Prior to leaving at the end of the shift, they shall remove their protective clothing and shoes, place them in a contaminated locker, and don their street clothing.

2. The scrap and salvage supervisor shall wear protective cover-alls over his personal clothing while doing work which might contaminate it.
 3. Visitors to the Waste Treatment area shall wear shoe covers over their personal shoes.
 4. Scrap and salvage personnel wearing protective clothing and shoes shall don shoe covers and white lab coats prior to entering the office in the Waste Treatment building.
- C. People entering the [REDACTED] Materials Development Lab, shall don lab coats and shoe covers, and shall remove and replace them in their respective racks when leaving.
- D. People entering the office areas of the Spectrographic, Chemical and Metallographic Labs shall put on covers or protective shoes. White lab coats shall be worn in the Spectrographic and Chemical Labs.
- E. The following regulations apply to the wearing and use of protective clothing in clean areas.
1. Employees working in cleaning areas shall be issued protective clothing and shoes for protection against acid damage to personal clothing. Maintenance people shall be supplied cover-alls for work in this area, if necessary.
 2. All persons entering the component or core assembly areas shall put on buttonless, white, lint-free coats, and rubbers, and remove them upon leaving.
- F. The following regulations apply to the use of safety equipment in all areas.
1. Employees will be required to use special protective clothing or equipment when specified by Health-Physics, the Safety Department, Standard Operating Procedures or Standard Instructions.
 2. Safety shoes shall be provided for employees wearing protective clothing in the fuel manufacturing area and scrap and salvage area. Other employees who desire safety shoes may obtain them at half price through the company's Safety Department.
 3. Safety glasses shall be issued to employees requiring their use by the Safety Department. All other items of protective equipment shall be issued by Central Stores.
- G. In general, soiling and damaging of protective clothing and shoes from wear, perspiration and grease acids, etc., have been found to occur sooner than significant contamination, and shall, therefore, be used as a criteria for changing such clothing. Rubbers shall be washed by Maintenance at least weekly on a continuing basis. Plastic shoe covers shall be washed and inspected after each use.



Westinghouse

WAPD-NAC-457

ja

BETTIS ATOMIC POWER LABORATORY
Naval Forces Department

Date: May 21, 1962

From: Bettis Atomic Power Laboratory

Mr. F. W. Hassett
Mr. J. A. Heeke
Mr. E. B. Prus

Subject: [REDACTED]

cc: Mr. E. T. Cox
Mr. N. A. Baldecca
Mr. H. H. Hoffman - PNRO (3)
Mr. P. N. Ross

To handle the SSW Core 4 and ALW Core 3 contracts at contractors and at Bettis requires certain organizational structures at Bettis and at the core contractor. This letter describes the proposed organization and lists the functions of the key personnel.

Bettis Organization

Bettis plans to assign to the [REDACTED] contractor a Bettis supervisor. These Bettis Resident Supervisors (RS) will be residents in the contractor's plants and will remain until the cores have been shipped. The responsibility of the RS is to assure that the core is produced in a reasonable time period to the required degree of quality. His duties will consist of the following:

1. Analyze and approve the contractor's schedules and planning. (Will consult with Bettis before approving.)
2. Analyze the machinery and processes planned or obtained by the contractor for adequacy, safety, and general acceptability. (Will consult with Bettis where needed.)
3. Coordinate the efforts of the contractor with those of Bettis where Bettis furnished material and components are required.
4. Determine the need for and obtain Bettis technical assistance as required.
5. Take the necessary actions with contractor and Bettis management personnel to achieve resolution of technical and manufacturing problems.

May 21, 1962

6. Maintain knowledge of status of contractual problems and analyze the effect of any delays on the schedule.
7. Evaluate the effectiveness of the contractor's organization and recommend changes to Bettis management when appropriate.
8. Advise the contractor of progress of certain designs or equipment being formulated or fabricated by Bettis or its subcontractors which affect the contractor's core. An example would be the seal welding machines and pro-
[REDACTED]
9. Provide Bettis and the Government with reports on the contractor's progress, general fitness, attitude, and other aspects which affect the acceptability of his work and product.
10. Evaluate the progress being made by the contractor's suppliers and visit their plants along with contractor personnel to assess personally the consequences of major problems in the subcontractors' plants.
11. Recommend design changes and/or requirements to Bettis that would decrease cost and/or schedule.

The Bettis Resident Supervisors will report to the Manager of Core Contractor Operations at Bettis who has the responsibility for core contractors meeting the program requirements on all Naval Cores that are under the technical cognizance of Bettis. Within the Core Contractor Operations Group the prototype cores will be handled separately by personnel other than those handling the production cores. Functionally the organization will operate as follows:

1. Production Cores will be handled by a Supervisor whose duties include the responsibility for coordinating the activities of Naval Cores Department, Bettis project departments, and core contractors on all production cores. All Requests for Engineering Change (REC's), Defect Notices (DNDR's) and Approval Requests (AR's) for production cores will be processed by this section. Scheduler evaluation and follow on production cores will be provided by this section. Personnel as required are assigned to this section.
2. [REDACTED] Project Engineer who will be the ERS's counterpart at Bettis. He will be responsible for coordinating all Bettis activities. [REDACTED] The actions required on REC's, DNDR's, AR's will be coordinated by this Project Engineer assisted by lower classification personnel as required. The status of all approved design changes will be maintained by this section. The Project Engineer will be the principal source of information to the design project on the status of their core, both at Bettis and at the contractors.
3. [REDACTED] Project Engineer whose functions will be similar [REDACTED]

* This is the name applied to the man from the Naval Cores Department and does not mean an engineer from the project design department.

May 21, 1962

4. Process audits of all cores will be scheduled and personnel assigned to the teams by the manager of Core Contractor Operations.

The BRS group at the contractor's plant will consist of:

- A. Bettis Resident Supervisor
- B. Engineer
- C. Stenographer

In the latter stages of the prototype fabrication and assembly it will be necessary for Naval Cores Department engineers and design project personnel to reside at the contractor's plant for short periods of time. This will be in keeping with the concentration of effort that normally accompanies the final stages of prototype manufacture. All Bettis personnel visiting the contractor for technical reasons on the prototype will work through the BRS office. Communications directly between contractor personnel and Bettis personnel will be permitted, but the contractor will be encouraged to keep the BRS advised of significant items that are discussed.

Bettis presently maintains resident quality engineers at the contractors' plants. An additional quality engineer will be assigned to each contractor having a prototype core. He will not report to the BRS but will work closely with him in performing his duties. The resident quality engineers are a part of the Core Materials Department at Bettis.

Contractual negotiations involving price will not be the responsibility of the Core Contractor Operations Group, but will be performed by the Purchasing Section within the Naval Cores Department. The BRS will assist where necessary on negotiations.

The Bettis organization is shown on Attachment I to this letter.

Core Contractor Organization

Bettis experience with [REDACTED] major problems that have developed at the core contractors over the past years indicates that the needs of the program can be fulfilled best by the contractor assigning the responsibility for the prototype core to an experienced man who will be Project Manager. His principal responsibility will be the timely completion of the core. He should report directly to the General Manager. He is responsible for:

1. Approving the over-all scheduling and planning including detailed schedules for acquisition or preparation of facilities, procurement of materials, preparation of specifications and drawings, shop and fabrication work.
2. Maintaining cognizance of status of core components in his own plant and in those of subcontractors and insure the proper expediting of those components.

May 21, 1962

3. Approving estimated costs of change notices.
4. Participating as required in negotiating contract changes with Westinghouse and subcontractors.
5. Evaluating the effectiveness of activities of engineering, manufacturing, quality control, service, and administrative groups within his plant and recommend actions to his management where necessary.
6. Distributing required technical and progress reports.
7. Investigating and evaluating all technical difficulties, defects, errors, accidents, etc. which pertain to prototype work.
8. Coordinating with the Bettis Resident Supervisor on interchange of technical information, scheduling and planning, audits, trouble shooting, etc.
9. Anticipating and preparing for impending interruptions or disturbing influences such as design changes, labor difficulties in his own or subcontractor plants, probable flood or hurricane, etc.

The Project Manager must be able to influence the priority of work performed by all activities. In activities such as engineering, production planning, purchasing, etc. specific individuals should be identified as being responsible for the prototype work within their own organization.

SUMMARY

In summary, Bettis will establish Bettis Resident Supervisors at each of the prototype core contractors. These BRS's will be supported at Bettis by individual units which will be responsible for coordinating the efforts at Bettis. It is proposed that the contractor establish a Project Manager responsible to the General Manager for completion of the prototype. He will have sufficient authority to fulfill his responsibility of seeing that the prototype is built to the required schedule and standard of quality.


K. W. Schwankamp, Manager
Naval Cores Department

/vps

Attachment

ATTACHMENT 1

NAVD-ENG-421

NAVAL CORPS DEPARTMENT

CORE CONTRACTOR OPERATIONS
F. W. Hassett, Mgr.

J. P. Hooper
Supervisor

Bettis Resident Supervisor
(At Corps Contractor)
W. H. McKim

Bettis Resident Supervisor
(At Corps Contractor)
J. E. Howell

At Bettis

At Corps Vendor

At Bettis

At Corps Vendor

1. Project Mgr.
2. Prod. Coordinator
3. Stenographer

1. Engineer

1. Project Mgr.

1. Engineer

2. Stenographer

2. Prod. Coordinator

2. Stenographer

3. Stenographer

**Note: Does not include technical personnel in
Projects or Naval Corps Engineering**

BETTISATMPGH
METALS AND CONTROLS INC 1 617-222-1259
10-7-63 849AMEDT ATTIL MASS

LFM

TO MR J A SPANGLER BETTIS W

REOUR P-97-2 PROPOSAL, PROCUREMENT COST FIGURES PREVIOUSLY DEFERRED
AT BOTTOM OF SECOND PAGE AS FOLLOWS

952D 333, PCS 12 - P-97 - DECREASE \$249
 -P-138 - DECREASE 41
952D333, PC 4 - P-97 - DECREASE 675
 -P-138 - DECREASE 90
952D333, PC 16 - P-97 - DECREASE 144

TOTAL PROCUREMENT COST DECREASE \$1,199. TOTAL P-97-2 PRICE THEN BECOMES
\$39,341. THE ABOVE DECREASES ARE FULL AMT ALLOWED FOR THOSE PCS IN
OUR VENDORS ORD.

R L CHURCHILL

2ND MSG

TO MR J A SPANGLER BETTIS W

REUR WIRE OF 10/2/63, OUR 8/31 INVOICE SHOWE 11.2 PERCENT SUBASSEMBLY
PROGRESS PRIMARILY DUE TO COMPLETION OF [REDACTED] ORD. MFG
OF SUBASSEMBLY COMPONENTS SUCH AS BRACKETS AND END PLATES ARE CONSIDERED
PART OF SUBASSEMBLY PHASE. IN THIS CASE 9.6 PERCENT OUT OF THE 11.2
PERCENT WAS FOR [REDACTED]

WE PRESUME FROM UR WIRE THAT ABOVE COMMENTS WILL FREE 8/31 INVOICE
M AND C OFFERS FOLLOWING COMMENTS

A. FORMAT USED FOR STATUS REPORTS ON PNRO CONTRACTS IS MORE CONSISTENT
WITH INVOICING PROCEDURE. WE ORIGINALLY PROPOSED SUCH A FORMAT FOR THIS
JOB BUT U REQUESTED WE USE THE PRESENT FORMAT INSTEAD. STEPS ARE BEING
TAKEN TO ADD THE COMPONENT COMPLETIONS INTO THE PRESENT FORMAT.

B IN ORD TO AVOID LATER SHIFTS IN JOB PERFORMANCE, M AND C MAKES IT
A POLICY TO BILL CONSERVATIVELY ON PROGRESS. THEREFORE IN MOST CASES
OUR INVOICED PROGRESS SHOULD LAG ACTUAL PROGRESS. IN ADDT THERE IS
30 DAY LAG IN UR PAYMENT AND RETENTION WITHHELD TO PROTECT U AGAINST
CALCULATION DIFFERENCES.

C WE QUESTION UR HOLDING AN INVOICE FOR THREE WKS AND THEN ADVISING
US BY LTR OF A PROBLEM IN MAKING PAYMENT. IF WE WERE TO OPERATE ON THE
SAME BASIS. WE COULD DELAY IN QUOTING P-CHANGES AT LEAST 60 DAYS.

D VISIT BY PERSON VERIFYING PROGRESS WOULD BE BEST WAY TO RECONCILE
ANY DIFFERENCES ON LONG TERM BASEIS. UNTIL UR PEOPLE UNDERSTAND HOW
WE TIE OUR STATUS INFO INTO INVOICES, THEY COULD HARDLY BE EXPECTED
TO HV CONFIDENCE IN OUR SYSTEM. WE UNDERSTAND JOE SHIFFGENS IS COMING
DOWN THIS WK TO REVIEW.

WE TRUST THE ACTIONS AND COMMENTS SET FORTH ABOVE WILL SOLVE BOTH THE
I IMMEDIATE AND LONG TERM PROBLEMS.

R L CHURCHILL

CFM

~~BETTIS~~ATMPGH
METALS AND CONTROLS INC 15 617-222-1259
10-1-63 115PM EDT ATTIL MASS

J SPANGLER BETTIS

REF ZIRC TRANSFER BACK TO AT /36-1/-98. TRANSFER PRESENTLY BEING
MADE.

C STANTON
END MARSHA
PLS CORRECT EIGHTH WORD TO RD PRESENTLY OK TUS\$\$
OK ENDQ

CFM

BETTISATMPGH

METALS AND CONTROLS INC 23 617-222-1259
8-21-63 222 PMEDT ATTIL MASS

MR J A SPAFGLER BETTIS

REMY TWX S OF 1/22, 2/1, AND 8/2, THIS IS MY SIXTH REQUEST. CAN
WE TRANSFER 77 LBS OF ZR TO CONTRACT -90. URGENT.

R L CHRUCHILL

2ND MSG

TO MR J A SPANGLER

REQUEST APPROVAL TO TRANSFER FOUR PCS OF ZIRCALOY WEIGHING 68.4
LBS TO KAPL PO NPD-4539-Y. THE KAPL PO COVERS AN URGENT REQUIREMENT,
FOR WHICH THIS WAS THE ONLY ZIRCALOY AVAILABLE. OUR OBTAINING YOUR
APPROVAL WAS QUOTED AS A CONDITION OF THE KAPL ORDER. IN THE EVENT
WE FIND THIS 68.4 LBS OF MATERIAL IS REQUIRED M AND C
WILL PROCURE IT SEPARATELY AND REPLACE IT TO PO 73-Y-297800-MPT.
PLEASE REPLY BY RETURN TWX.

R L CHRUCHILL

3RD MSG

BETTISATMPGH

CFM

METALS & CONTROLS INC 4 8-2-63 1000A ATTLEBORO MASS

MR. J. A. SPANGLER - BETTIS

HAVE YOU APPROVED REC NO. 226 COVERING LEG LENGTH ON TEST HEAD BARS/

R. L. CHURCHILL

2ND MSG

MR. J. A. SPANGLER

REMY TWX,S OF 1/22 AND 2/1/63, WE STILL HAVE NOT RECEIVED YOUR FORMAL
APPROVAL TO TRANSFER 77 LBS OF ZR TO CONTRACT AT/36-1/-90. WILL YOU
PLEASE RESPOND, SINCE THIS WAS ORIGINALLY MATERIAL FOR DEVELOPMENT
WORK/

R.L. CHURCHILL

ZNR

PII 2125Z

FM WESTINGHOUSE BETTIS ATOMIC POWER LAB V W LEHTONEN PGH PA
TO METALS & CONTROLS INC R L CHURCHILL ATTLEBORO MASS

AEC

BT

UNCLAS - WESTINGHOUSE REQUESTS M&C CONCURRENCE TO THE
FOLLOWING BY 4/14/66.

1. P-330 - WE WILL PROVIDE [REDACTED] TO M&C
REQUIRED BY ORDER AND ADJUST URANIUM TO ACTUAL SHIPPED - NO
CHANGE IN ORDER PRICE.

2. P-356 - WE NOW REQUIRE ONE BAPL FABRICATED H3 AND THE
FOLLOWING M&C FABRICATED ELEMENTS

QUANTITY	TYPE
2	H2
1	H3

$\frac{14}{15} \times 247.60 = 237.14$
9/12/66 mk nox

PAGE 2 UNCLAS -

QUANTITY	TYPE
4	H4
2	C2
2	C4
3	PE2

REQUEST M&C SHIP THESE AT NO CHARGE TO WESTINGHOUSE.

SMR VWL 368 4/11/66

BT

368 4/11/66 BLAIR

NNNN

ZNR

P11 2120Z

FM WESTINGHOUSE BETTIS ATOMIC POWER LAB V W LEHTONEN PGH PA
TO METALS & CONTROLS INC R L CHURCHILL ATTLEBORO MASS

AEC

BT

UNCLAS - PROVIDE DATES FOR RESOLUTION OF THE FOLLOWING ITEMS
BY 4/14/66.

1. AVAILABILITY OF ALL SPARES /ATTACH 3/ SHORTAGE ITEMS.
2. RESIDUAL [REDACTED]
3. SPECIAL TOOLING SCHEEEEEEEEEEE SCRAP OFFER.
4. INCONEL LISTS AND RESOLUTION. — *Signate review Rec No. 11/11/66*
5. QUOTE SCRAP RECOVERY.
6. SUBMITTAL OF LICENSE REQUEST TO DML TO SHIP SCRAP IN
WESTINGHOUSE CONTAINERS
7. DETAILED INVENTORY OF RESIDUAL COMPONENTS AND OTHER
GOVERNMENT FURNISHED ITEMS.

SMR VWL 362 4/11/66

BT

363 4/11/66 BLAIR



WAPD-O-(EC)-C-1212

BETTIS ATOMIC POWER LABORATORY
From Nuclear Core Purchasing - SMR-2

Date March 22, 1966

BETTIS ATOMIC POWER LABORATORY
B-AT Building

Mr. J. E. Jensen, Supervisor

Naval Plants Engineering

Subject Residual Property:
Metals & Controls, Inc.
Purchase Order 73-Y-297800-MPT

cc: J. J. Gertz
R. G. Blair
J. B. Karnash
J. H. Davis

Westinghouse furnished M&C finished components under the subject order and there are numerous residual items. We asked M&C to provide an inventory of these and they in return requested we provide shipping instructions so they would not have to duplicate efforts preparing an inventory and then going through it again for Government inspection at the time of packaging and shipping.

These items are Government property which should be dispositioned. M&C wants to be relieved of responsibility for them as well as free the space in which they are presently stored.

Your concurrence is requested to authorize shipment of these items to Bettis, for storage in our warehouse or subsequent shipment to NRP as additional spares, or such other disposition the Project elects. Please provide the name of the individual to whom these should be addressed.

V. W. Lehtonen, Buyer
Nuclear Core Purchasing Department

/lft

NNNN

ZNR

PO4 1425Z

FM WESTINGHOUSE BETTIS ATOMIC POWER LAB V W LEHTONEN PGH PA
TO METALS & CONTROLS INC J M WHITE ATTLEBORO MASS

AEC

BT

UNCLAS - M&C'S OFFER TO CONSIDER WITHDRAWING A PENDING
CLAIM - SEE ITEM 4 OF TASKERS 2/18/66 LETTER ON RETENTION
PAYMENTS - IS UNACCEPTABLE BECAUSE IT REQUESTS RELEASE OF
RETENTION BEFORE ORDER COMPLETION AND WOULD CONSTITUTE A
VIOLATION OF ARTICLE 11 - ORDER ATTACHMENT 1.

SMR VWL 368 3/4/66

BT

368 3/4/66 BLAIR



Westinghouse Electric Corporation

Battis Atomic Power Laboratory P.O. Box 79
West Mifflin, Pa. 15122

WAPD-O-(NC)-C-1129

January 28, 1966

*For discussion
E.M.T. 2/17/66 AM*

Metals & Controls, Inc.
P. O. Box 898
Attleboro, Mass. 02703

Attention: Mr. R. L. Churchill, Marketing Manager

Subject: M&C Order WAPD-203
Westinghouse P.O. 73-Y-297800-MPT
Retention Payments

Gentlemen:

Your request to reduce the total retention on the subject purchase order to \$70,000 has received careful consideration. We find there are several items which appear to need resolution, resulting in the deferment of your request at least until these are satisfactorily resolved.

Most of these have been communicated to M&C in the past few months, in addition to the discussions with Mr. Tasker during his trip of December 8, 1965. Your prompt, detailed written reply to each and every item is requested.

1. Spares (Reference Order Attachment #3, dated 8/1/65)

- Plan 3.1879*
- A. When will M&C forward the certification on Item "H"? *DSP 2 wks after*
- B. M&C has identified the following shortage items, and a credit quote is expected. A firm date for this quotation is requested.

<u>Item</u>	<u>Order Quantity</u>	<u>Shortage</u>
Q	1	1
BC	28	25
BL	20	20
BN	20	15
BP	1	1
BY	20	8
CA	1	1
CF	1	1

Plan Jensen

M&C found etc.

Unit - not attached
C. MEC represents Items V, W, and X were shipped to Westinghouse and MEC shipping order numbers have been provided. However, since we have no record of receiving them additional information such as the carrier, Bill of Lading number, plus a copy of the MEC shipping document are needed to help establish they did arrive.

Unit 3
D. MEC represents Items BT and BU were furnished as part of the [REDACTED]. We agree identical items were received in the [REDACTED] but the items received were required as an integral part of Item D. Therefore, Items BT and BU, which were incorporated into Attachment 3 as new requirements, by Change Notice No. 140, long after the requirement for Item D existed, are additional to those provided in Item D. What does MEC propose to do to satisfy this requirement?

new X-ray pump
Item Z was represented to be ready for shipment on December 17, 1965, and shipping instruction provided to MEC requested shipment to Combustion Engineering, Chattanooga, so as to arrive by January 15, 1966. This date was identified so that work on the component schedule by CE for that time could get started. As of this date we have no firm commitment from MEC on this item.

2. Residual Westinghouse Furnished Property

Westinghouse furnished MEC significant quantities of raw materials, finished components and pieces of equipment. We have requested an inventory report of these, which should be readily available since it is an order requirement to maintain proper inventory control.

mlc reply 3/15/66
To assist you in identifying Inconel due back to us, we forwarded, by letter WAFD-C-(NC)-C-936, dated August 25, 1965, copies of our shipping documents ("L-Orders"), plus reports and summaries relative to Inconel furnished under this order. To date we have received no reply.

To assist you in identifying residual components and equipment we submit the following list, which appear to be some of the outstanding items according to our records.

No.	BAPL Shpg Order	Date Shipped	Qty.	Description
1	L-77	11/15/63	1	Aluminum Assembly Fixture
2	L-77	11/15/63	1	Annealing Boat (3 pieces)

NOTE: Items 1 and 2 were utilized by MEC in relation to Change Notice No. 261

3 L-91 11/6/64 1 Plug

NOTE: Item 3 was used by MEC in hydro-testing [REDACTED]

<u>No.</u>	<u>BAPL Shpg Order</u>	<u>Date Shipped</u>	<u>Qty.</u>	<u>Description</u>
4	L-163	11/3/64	2	Thermocouple Guide Tubing Probes, .072 O.D., Serial 2761 and 2762.
5	L-164	11/6/64	1	Thermocouple Guide Tubing Probe, .072 O.D.
6	L-165	11/10/64	2	Thermocouple Guide Tubing Probes, .072 O.D. Serial 2761 and Serial 2762 (same as L-163; were annealed and work hardened by BAPL and reshipped to M&C).

NOTE: Items 4, 5 and 6 used by M&C for Thermocouple Guide Tube Probing.

7	L-166	11/18/64	3	Probes per Sketch 3K-GR-P-A-101564, Gr. 1.
---	-------	----------	---	---

NOTE: Item 7 used by M&C [REDACTED]

8	L-173	1/12/65	1	Thermocouple wire .072 dia. x approx. 27 ft. long.
---	-------	---------	---	---

NOTE: Replacement for one previously sent to M&C; used for measuring
the TC-1 path in the A1 and C1 modules.

9	L-174	1/14/65	2	Thermocouples, .072 dia. x approx. 25 ft. long, Serial Nos. 2844 and 2776.
---	-------	---------	---	---

NOTE: Used by M&C for thermocouple guide tube probing.

10	L-174	1/22/65	2	Helical Standard S.B. Cable, .250" O.D., x approx. 20 ft. long, and .116" O.D. x 30 ft.
----	-------	---------	---	---

NOTE: Used by M&C for A1, C1, and D2 module flux thimble probes.

11	L-176	1/15/65	2	Flux thimble probes (Gr. 3 Dwg. Sk-GR- P-A 101564-A).
----	-------	---------	---	--

NOTE: Used by M&C to probe [REDACTED]

12	L-178	2/17/65	4	Pressure tap probe assemblies, tube diameter .065 x approx. 21 ft. long.
----	-------	---------	---	---

NOTE: Replacement units for probes sent to M&C [REDACTED]

No.	BAFL Shpg Order	Date Shipped	Qty.	Description
13	L-135	8/14/64	2	Probes, Gr. 1, Dwg. 938A157
			3	Probes, Gr. 2, Dwg. 938A157
NOTE: These probes were shipped directly from the BAFL supplier to M&C on Purchase Order 73-Y-338206-N.				
14	L-190	4/28/65	4	Compression Nuts, WISCO Dwg. No. 8600-4200, Pcs. 4202, 4203, 4204, 4207.
			1	Nut test fixture WISCO Dwg. No. 8600-13400.
NOTE: Power Package shipping container parts.				
15	L-199	5/26/65	1	Lead screw torque tool assy. 935F314, Gr. 1, R7465.
			1	Strongback Assy. (lower section) 935F317, Gr. 1
			1	Strongback Assy. (upper section) 966D268, Gr. 1
			1	Tool support ring, 966D260, Pc. 4, R7477.
			2	Stud tensioners, Serial #1 & 2.
			1	Hydraulic Pump.
			1	Length of spare pressure hose for pump.
L-200	5/27/65		1	Tringer sleeve, 966D264, Item 1.
			1	Adapter, 935F313, Item 7.
			1	Adapter, 935F313, Item 8.
L-206	5/28/65		1	Lead screw torque tool, 935F314, Gr. 1 less Item 21, Serial #H01-CT-3.
			1	Strongback assy. (lower section) 935F317, Gr. 1
			1	Strongback assy. (upper section) 966D268, Gr. 1

No.	BAPL Shpg Order	Date Shipped	Qty.	Description
15 (Continued)			1	Tool Support Ring, 966D260, Pc. 1, R46358
			1	Hydraulic Pump
	L-207	5/8/65	2	Spare pull rod adaptors for lead screw torque tool.

REMARKS: All items under L-199, L-200, L-206, and L-207 were used in the lead screw modification program.

Direct shipment was made from our vendor, Czarnecki Machine Company (our Purchase Order 73-DY-362512-M) to M&C about 5/21/65 for the following:

Item	Qty.	Description
1	2	Thermal barrier assembly handling device Dwg. 930C894-1.
2	2	Thermal barrier assembly torque tool Dwg. 930C893-1.
3	2	Thermal barrier guide on device, Dwg. 930C895-1.
4	2	Thermal barrier crimping tool Dwg. 963D662-2.

*One returned to Bettis on 5/14/65.

Westinghouse is continuing its review of the materials, components and items of equipment furnished M&C, either from Bettis Laboratory or directly from our subcontractors. In line with this we requested M&C provide an inventory of residual items, which we have not received. Such an inventory would be most beneficial and can serve only to accelerate complete relief of responsibility for these items, for which you realize you are responsible until they have been all accounted.

3. Defective Overage Items

On November 16, 1965 we requested M&C ship 8 bolts (Drawing 08-C-0017), and 8 pins (Drawing 08-B-0316, Pc. 7) to MRC. These are overage items Westinghouse furnished M&C. It was subsequently established in Westinghouse and Navy Inspection that plating on the threads of two bolts had chipped off. The bolts in question are a part of those supplied by Westinghouse in which M&C found defects in the plating upon receipt at M&C's facilities, Westinghouse had them corrected at our vendor's facilities, whereupon they were returned to M&C and M&C accepted them for use.

We requested a review of the history of these bolts to establish whether or not the existing defective condition occurred before or after being received at M&C the second time. If M&C is unable to satisfactorily demonstrate these defective conditions existed the second time they were received at your plant, then M&C should effect repairs at their expense, and ship all these items as requested. It was necessary to have four of each of these items shipped to M&C on January 21, 1966, the remaining four bolts, [REDACTED] action by M&C for which we have no commitment date.

4. Pending Claim

Q-760
On October 27, 1965, Mr. Churchill stated M&C would soon be requested to release qualified personnel needed for the test head program to other activities within the company. This was repeated by Mr. Tasker on November 4 and November 9, 1965, at which time Westinghouse requested M&C provide an assessment of potential claim costs, based on March 1, 1966 delivery of the test head adaptor flange. On January 3, 1966, Mr. Tasker stated M&C was preparing a claim associated with the test head program. To date Westinghouse has received no claim, nor have we been advised as to its magnitude. An informal figure of \$1,000 per month to defer uncompensated overhead was mentioned by Mr. Tasker, which is difficult to comprehend since M&C will continue fabricating power packages for the Government through December 1966, based on current schedules. What are M&C's intentions relative to a claim in this area?

5. P-330: [REDACTED]

JWP
Westinghouse can revise this inquiry to reflect modification only to the quantity of Item 1 in Order Attachment #5, and the heretofore unfurnished quantities of Items 1.2 and 1.3 can be shipped if M&C wants them. If not, the quantities of these items will be modified to reflect actual quantities shipped without change in order price. Your concurrence to one of these approaches is requested.

6. P-356: Elements to Westinghouse

Our position on being assessed any price for the elements identified in the proposed change has been stated before, and is herein noted again. M&C was provided materials to make the elements, and paid for the labor involved in their fabrication, at a yield rate considerably lower than actually experienced. M&C realized a profit on the labor originally contemplated, and since the total labor involved was less than that contemplated, M&C realized a savings on unexpended labor. Under the circumstances we conclude M&C should have no reservation in sending these elements to Westinghouse without additional cost. When will we receive your proposal?

Our review of the contract is continuing and our objective is to effect closeout at the earliest possible date. Your cooperation in resolving the numerous loose-ends will be appreciated.

Very truly yours,

T. P. Kelleher, Supervisor
Nuclear Core Purchasing Department



By V. W. Lehtonen, Buyer

/lft

AF
April 15, 1964

Mr. R. L. Churchill
Metals & Controls
Attleboro, Mass.

Mr. G. G. Ritter
Metals & Controls
Attleboro, Mass.

Unclas.....Reference M&C WAPD-203, BAPL 73-Y-297800-MPT

In accordance with Article 27-E-4 of order Attachment 1, ship in proper containers
and via B&P residual quantities of [REDACTED]

Westinghouse Electric Corporation, Bettis Atomic Power Laboratory, Homestead,
Pennsylvania . Attention: Mr. M. E. Lee, Sponge House No. 1

Keep pure material separated from mixed material, and do not mix scrap with chips.

Shipment must be identified to our purchase order number.

Advise when material will be shipped.

V. W. Lehtonen

Nuclear Core Purchasing

641

cc: Mr. M. E. Lee
Mr. R. M. Matyas
Mr. R. B. Bell
Mr. J. Ansler

85
ZNR

P 25 1520Z

FM V W LEHTONEN WESTINGHOUSE BETTISATOMIC POWER LABORATORY PGH PA
TO MR G P HOWLAND METALS AND CONTROLS, INC P O BOX 898

ATTLEBORO, MASSACHUSETTS

TO MR G G RITTER BETTIS RESIDENT SUPERVISOR METALS AND CONTROLS
P O BOX 898 ATTLEBORO, MASSACHUSETTS

AEC GRNC

BT

UNCLAS.....REFERENCE M&C WAPD-203, BAPL 73-Y-297800-MPT

AND MR HOLBURN 3/16/64 LETTER ON URANIUM SCRAP RECOVERY....

REGARDING [REDACTED] SECTIONED

ELEMENTS, M&C IS TO IDENTIFY TYPES AND QUANTITIES OF EACH TYPE.

REGARDING MOUNTS AND SMAEEEEEEEE SAMPLES, M&C IS TO VERIFY THESE

ARE ONLY THOSE RETURNED BY BETTIS TOM&C. ABOVE INFORMATION

REQUESTED BY 4/3/64. REF SMR VWL 641

BT

CFN 641

cc: J. A. Beeke, Jr.
W. B. Thomas

3/25/64 1524Z RUEPAU

NNNN



OFFICE

USE ONLY

FROM: Westinghouse Electric Corporation

DATE OF
CHANGE NOTICE

THIS CHANGE NOTICE APPLIES TO:

AT P.O. BOX 1468, PITTSBURGH 30, PA.

4/26/63

PURCHASE ORDER NO.

DATED

73-Y-297800-MPT

5/16/62

METALS & CONTROLS, INC.

P.O. BOX 898

ATTLEBORO, MASS.

ATTN: R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE, YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR

APR 29 1963

REFER TO P-83.

CHANGE NOTICE NO. 79

THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS A RESULT OF THIS CHANGE NOTICE.

THE FOLLOWING CHANGES ARE MADE TO ATTACHMENT 4, MASTER LIST OF DRAWINGS AND SPECIFICATIONS TO THE ORDER:

ITEM	DRAWING	FROM REV.	TO REV.
B1, D1 SUPPORT NUT	935C081	3	4
B2, D2, D4 SUPPORT NUT	935C079	2	3
TYPE C POSITIONING PIN	910B485	1	2

AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----

INCREASE PER THIS CHANGE NOTICE -----

NEW PURCHASE ORDER TOTAL -----

DO E-2 APPLIES.

AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR Westinghouse Electric Corporation, Purchasing Department

MARK FOR

TENTION OF:

J.A. SPANGLER/BMG L7

BUYER

AUTHORIZED BY:

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)

FROM

RECEIVED BY

(SIGNED FOR SUPPLIER)

DATE



OFFICIAL USE ONLY

FROM Westinghouse Electric Corporation
AT P.O. BOX 1468, PITTSBURGH 30, PA.

DATE OF
CHANGE NOTICE

9/13/63

THIS CHANGE NOTICE APPLIES TO:

PURCHASE ORDER NO.

73-Y-297800-MPT

DATED

5/16/62

METALS & CONTROLS, INC.
P.O. BOX 898
ATTLEBORO, MASS. 02703
ATTN: MR. R.L. CHURCHILL

"BY YOUR ACKNOWLEDGMENT OF THIS CHANGE NOTICE,
YOU AGREE THAT ALL CHANGES IN PRICE OR DELIVERY
WHICH ARE REQUIRED BY THIS AND ALL PREVIOUS CHANGE
NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND
DELIVERY DATE ESTABLISHED BY THIS CHANGE NOTICE
(EXCEPT FOR #151)

REFER TO P-104-2

CHANGE NOTICE NO. 191

CONFIRMS ORAL TO MR. CHURCHILL ON 9/13/63.

1. THERE IS NO CHANGE IN THE DELIVERY OF THIS ORDER AS A RESULT OF THIS CHANGE NOTICE.
2. AS A RESULT OF THIS CHANGE NOTICE, THE PRICE OF THE ORDER IS CHANGED AS FOLLOWS:

PREVIOUS PURCHASE ORDER TOTAL -----
INCREASE PER THIS CHANGE NOTICE -----
NEW PURCHASE ORDER TOTAL -----

3. THIS CHANGE NOTICE FIRM PRICES CHANGE NOTICE NO. 191 AT \$23,983. \$20,000 WAS FUNDED BY CHANGE NOTICE NO. 191. THEREFORE THE PRICE OF THIS CHANGE NOTICE IS \$3,983.

ACKNOWLEDGMENT
FAILURE TO SIGN AND RETURN THIS CHANGE NOTICE
WITHIN 10 DAYS AFTER DATE OF CANCELLATION
MAY BE CAUSE FOR CANCELLATION

DO E-2 APPLIES.

"I AGREE THAT ALL CHANGES IN PRICE OR DELIVERY WHICH ARE REQUIRED BY THIS AND ALL
PREVIOUS CHANGE NOTICES HAVE BEEN INCORPORATED IN THE PRICE AND DELIVERY DATE
ESTABLISHED BY THIS CHANGE NOTICE (EXCEPT FOR
Westinghouse Electric Corporation, Purchasing Department

MARK FOR
ATTENTION OF:

J.A. SPANGLER/BMG

L7

BUYER

AUTHORIZED BY:

PURCHASING AGENT

ACKNOWLEDGMENT

WILL SHIP (DATE)

FROM

ACKNOWLEDGED & ACCEPTED BY:

Letter to revise sizes on P. 3
R.L. Churchill 9/3/63
(SIGNED FOR SUPPLIER)

WESTINGHOUSE ELECTRIC CORPORATION

THIS IS PART OF PURCHASE ORDER 73-7-397600-173

Page 2

Metals & Controls, Inc.
P. O. Box 898
Attleboro, Mass.

CHANGE NOTICE NO. 191

4. Change Notice 161, Paragraph 4, added paragraph (m) to Article 27 of Order Attachment 1, General Provisions. Paragraph 4 of Change Notice 161 is cancelled, and the following is hereby added to the order as paragraph (n), Article 27, Attachment 1, General Provisions of the order.

- [REDACTED]
- (1) Westinghouse [REDACTED] listed in Section 1.5.1 of Attachment 5, at no cost to Seller, FOB Carrier, Seller's Plant, freight prepaid.
 - (2) Title to Zircaloy billet furnished by Westinghouse shall remain in the Government, except that, upon delivery and acceptance of the core, title to all the residue of such material shall vest in Seller. All scrap generated from fabrication of such material becomes the property of Seller upon delivery and acceptance of the core, and shall be disposed of at his expense.
 - (3) In the event Seller requires additional Zircaloy material, upon Seller's request to Westinghouse, Westinghouse shall make available for purchase by Seller, at average inventory prices, additional sponge meeting the specifications of AT-(11-1)-389 or additional Zircaloy shapes.
 - (4) After final acceptance by Seller, Seller shall be solely responsible for Zircaloy material furnished by Westinghouse per Section 1.5.1 of Attachment 5 and shall bear all risks for subsequent rejection, provided however, that, prior to final acceptance by Westinghouse of the items to be delivered under this order, if Seller can show to the satisfaction of Westinghouse that a latent defect is present, and such latent defect was in the material as supplied by Westinghouse, Westinghouse will replace the material at no cost to Seller to the original specification.

WESTINGHOUSE ELECTRIC CORPORATION
THIS IS PART OF PURCHASE ORDER 44-1497800-172

Page 3

Metals & Controls, Inc.
P. O. Box 898
Attleboro, Mass.

CHANGE NOTICE NO. 191

5. Change Notice 161, Paragraph 5, provided for Westinghouse supply of Zircaloy. The final sizes were not specified. They are as noted by the following which is added as Section 1.5.1 of Attachment 5, Westinghouse Furnished Material:

Type	Qty.	Form	Shape	Spec.	
[REDACTED]	2	[REDACTED]	[REDACTED]	MIL-Z-19859B	[REDACTED]
[REDACTED]		[REDACTED]	[REDACTED]		

6. Seller will return the following material to Westinghouse from that amount shipped by Westinghouse per Change Notice No. 101:

Type	Form	Qty.	Shape	Spec.
[REDACTED]		1	[REDACTED]	MIL-Z-19859B
		2	[REDACTED]	
		6	[REDACTED]	
		4	[REDACTED]	

CONFIDENTIAL



Westinghouse Electric Corporation

Bettis Atomic Power Laboratory Box 1463, Pittsburgh 30, Pa.

WAPD-NAC-PA-3233

July 22, 1963

*
Metals and Controls, Inc.
Post Office Box 898
Attleboro, Massachusetts

Attention: Mr. R. L. Churchill

Dear Sir:

This is P-104-2

Please quote the following proposed changes to the order. You are requested to advise Westinghouse not later than July 31, 1963 when you will submit your quotation and by return TWX when you require release of the various drawings to preclude core delivery delay.

<u>Item</u>	<u>Drawing</u>	<u>From Revision</u>	<u>To Revision</u>
BC, DC Duct Flange Assy.	921F153	2	4
Bolt Detail	935C711	2	4
BC Flange	958D556	2	4
DC Flange	958D557	2	4
C Distribution Plate	935C773	None	2
E " "	935C774	None	2
B " "	935C775	None	2
D " "	935C776	None	2
D2 Lower Module Assy.	922J716	5	8
B1 " "	923J290	5	8
B2 " "	922J711	5	8
E " "	923J295	4	7
D1 " "	922J710	4	7
D1 " "	923J297	5	8
B2 " "	923J296	5	8
D1 " "	922J712	3	5
B1 " "	922J706	3	5
D2 " "	922J713	4	7
J1 " "	923J299	4	7
D1 " "	922J353	6	9
C2 " "	922J349	5	8
E Assy. Flange	958D553, Gr. 2	4	7
D " "	958D559	4	6
C " "	959D160	3	6
B " "	958D540	*	2

* From 958D558-5, Gr. 1

DOCUMENT TRANSMITTED HERewith CONTAINS RESTRICTED
DATA. WHEN SEPARATED FROM ENCLOSURES, HANDLE
THIS DOCUMENT AS UNCLASSIFIED.

The following will be added as paragraph (n), Article 27, Attachment 1, General Provisions of the order:

- [REDACTED]
- (1) Westinghouse [REDACTED] listed in section 1.5.1 of Attachment 5, at no cost to Seller, FOB Carrier, Seller's Plant, freight prepaid.
 - (2) Title to Zircaloy billet furnished by Westinghouse shall remain in the Government, except that, upon delivery and acceptance of the core, title to all the residue of such material shall vest in Seller. All scrap generated from fabrication of such material becomes the property of Seller upon delivery and acceptance of the core, and shall be disposed of at his expense.
 - (3) In the event Seller requires additional zircaloy material, upon Seller's request to Westinghouse, Westinghouse shall make available for purchase by Seller, at average inventory prices, additional sponge meeting the specifications of AT-(11-J)-389.
 - (4) After final acceptance by Seller, Seller shall be solely responsible for zircaloy material furnished by Westinghouse or additional sponge made available for purchase by Seller and shall bear all risks for subsequent rejection. After final acceptance by Seller, Seller shall be solely responsible for such property; shall bear all risks for subsequent rejection whether or not due to unknown or latent defects; and Westinghouse shall not be obligated to replace defective or rejectable property nor be liable for loss by reason of plant shutdown, non-operation or increased expense of operation or any other consequential loss or damage.

The following will be added as section 1.5.1 of Attachment 5, Westinghouse Furnished Material:

<u>Type</u>	<u>Quantity</u>	<u>Form</u>	<u>Shape</u>	<u>Spec</u>	<u>Use</u>
[REDACTED]	2	[REDACTED]	[REDACTED]	MIL-Z-1259E	[REDACTED]
[REDACTED]					
[REDACTED]					

See next paragraph concerning lengths.

Seller is requested to advise in his quotation the lengths of material required. The pieces will be furnished in 85 and 95 inch lengths. Seller shall plan his utilization so as to use one entire length and return to Westinghouse the maximum size possible of material 4" x 15" x length. Seller shall not return any material less than the full width furnished (15" + 1/4"). Seller's price shall include cutting and handling required in connection with return of the piece noted.

Very truly yours,

A. Cavalcante, Jr./Supervisor
Naval Cores Procurement Department

By S. J. Rodgers
S. J. Rodgers, Buyer

/mup

cc: A. R. Sabol
J. J. Schiffgens
R. M. Matyas
A. Cavalcante, Jr.
L. F. Bendinelli
C. D. Malloy
B. May
G. H. Cohen
J. E. Howell
T. Rodgers

TO: NAVAL CORES PROCUREMENT

PAGE 1 OF 1 PAGES

THE SPACES ABOVE AND TO RIGHT OF BOLD LINES TO BE FILLED IN BY PROCESSING SECTION ONLY

SUPPLIER'S NAME <i>Metals and Controls Nuclear</i>		DMS RATING <i>DO- E2</i>	
SUPPLIER'S ADDRESS <i>PO Box 898 Attleboro, Mass</i>		CASH TERMS	COMMODITY CODE <i>FLC</i>
CONFIRMING WIRE VERBAL LETTER	TO	DATE	TO BE TYPED: ☐ P. O. ☐ P. O. I. R. ☒ P. O. C/N ☐ WORK REQUEST ☐ INTERWORKS REQ'N
F. O. B.	TRANSP. CHARGES	COORDINATOR <i>LF Bandy</i>	ATTACHMENTS: ☐ DRAWINGS ☐ SPECIFICATIONS ☐ TERMS AND CONDITIONS ☐ INSP. REQ'TS.
SHIPPING DATE	SHIP VIA	BUYER <i>20 Sp - C</i>	EXEMPT FROM } FEDERAL EXCISE TAX SUBJECT TO }

THE SPACES BELOW TO BE FILLED IN BY ENGINEER

ITEM	QUANTITY	DESCRIPTION	ENGINEER'S C/N NO.	UNIT PRICE	TOTAL PRICE
		<i>Please release the following</i>	<i>4 3</i>		
		<i>1. SUPPORT TUBES</i>			
		<i>923 F141-REV 4</i>	<i>922-1768 REV 2</i>		
		<i>923 F103 * 5</i>	<i>923 F142 " 3</i>		
		<i>911 F668 " 2</i>			
		<i>2. SHROUDS *</i>			
		<i>917 F463 - 6</i>	<i>923 F104-5</i>	<i>923 F113-5</i>	
		<i>917 F197 - 4</i>	<i>923 F134-5</i>	<i>923 F130-5</i>	
		<i>917 F198 - 6</i>	<i>923 F119 - 5</i>	<i>918 F904 - 6</i>	
		<i>917 F194 - 6</i>	<i>923 F117-5</i>	<i>9510 246-3</i>	
		<i>917 F196 - 5</i>	<i>923 F135-5</i>	<i>924 F123-1</i>	
		<i>923 F151-4</i>	<i>922-1700-5</i>	<i>9510 240-3</i>	
		<i>923 F150-7</i>	<i>923 F107-5</i>		
		<i>923 F120-4</i>	<i>923 F126-5</i>		
		<i>9520335-6</i>			
				TOTAL PRICE	

COST ESTIMATE	TOTAL WEIGHT	LAST REQ'N NO. <i>2</i>	GOVERNMENT INSPECTION REQUIRED AT PLACE OF MFG. ☐
DATE REQUIRED	C/N COST CEILING	P. O. COST CEILING <i>NO CHANGE</i>	NAVY INSPECTION - PLACE OF MFG. ☐ DESTINATION ☐
DELIVER TO		S. O. NO. <i>469569</i>	THE GENERAL SPECIFICATIONS FOR INSPECTION OF MATERIAL ISSUED BY THE NAVY DEPARTMENT APPLIED TO THIS ORDER.
		CHARGE <i>117C67</i>	NO NAVY/GOVERNMENT INSPECTION ☒
END USE			SUGGESTED VENDORS
	AEC OR NAVY CONTRACT <i>AT-11-GEN-14</i>		CHEMICAL TEST ☐ PHYSICAL TEST ☐ CODE INSPECTION ☐ INITIAL
ORIGINATED BY <i>C.D. Mallory</i>	DATE <i>7/3/62</i>	DEPT. <i>NAVM C-REG</i>	THIS REQUISITION HAS BEEN REVIEWED, & IS UNCLASSIFIED. ANY CLASSIFIED INFORMATION IS INCLUDED AS AN ATTACHMENT.
			APPROVED: <i>[Signature]</i> DATE: <i>9/30/62</i>

10:

PAGE OF PAGES

THE SPACES ABOVE AND TO RIGHT OF BOLD LINES TO BE FILLED IN BY PROCESSING SECTION ONLY

SUPPLIER'S NAME

DATE REQUIRED

SUPPLIER'S ADDRESS

THE SPACES BELOW TO BE FILLED IN BY ENGINEER

ITEM	QUANTITY	DESCRIPTION	ENGINEER'S C/N NO.	UNIT PRICE	TOTAL PRICE
		3. OMEGA SEAL BLOCKS *			
		911 F655-2 923 F133-4			
		911 F654-2 923 F116-6			
		923 F115-4 923 F123-4			
		911 F652-2			
		The [redacted] region of the seal blocks should not be finish machined. Sufficient stock must be left to permit changing the [redacted] seal membrane [redacted] should this become a requirement.			
		4. Release of the above 3 items is contingent upon completion of C/N negotiations.			
		5. McC and their subcontractors are released to prepare process outlines, and welding, fabrication, cleaning and inspection procedures that must be prepared in advance of fabrication release for the barrels, control rods, shrouds, upper manifolds, seal blocks, and support tube per the drawings transmitted in P-3, P-5, and P-6.			
		* Ref 264's Ser # 3810-31, 32, 33			CDM 7-31-6.

15-

METALS & CONTROLS INC. P. O. BOX 898 • ATTLEBORO, MASS. • CASTLE

A CORPORATE DIVISION OF TEXAS INSTRUMENTS INCORPORATED

Bug File
7/16/63

File: WAPD-203
May 1, 1963

Mr. J. A. Spangler
Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Reference: WAPD-NAC-2983 Spangler to Churchill dated April 22, 1963

Dear Mr. Spangler:

In reply to referenced letter, the Zircaloy has not been transferred back to AT(36-1)-98. Production requirements have been such that surplus quantities have not been large enough to effect the transfer in one lot. However, the transfer should be completed no later than the end of June.

Very truly yours,



C. Stanton
Contract Administrator
Navy Nuclear Products

CS/bs

*Copy 4
From M&C*

WESTINGHOUSE BETTIS GA PLSM
M AND C NUCLEAR ATTL MASS 10/5/62 445 PM

ATTN J A SPANGLER

CONFIRMING PHONECON THIS DATE, M AND C PRICE FOR P-18 IS \$59,904 FOR PRODUCTION PHASE AND \$3,109 FOR DEVELOPMENT AND QUALIFICATION PHASES, IF REQUIRED. CONFIRMING LETTER WILL FOLLOW OUTLINING ASSUMPTIONS AND EXCEPTIONS AS READ IN HIGHLIGHT DURING PHONECON

R L CHURCHILL

2ND MESSAGE

ATTN J A SPANGLER

DUE TO PROGRAM AGREED UPON DURING THIS WEEKS MEETING AT M AND C, WE URGENTLY REQUIRE THE REMAINDER OF ITEM 1.1.1 OWED TO US "4.6 KGS" AND UP TO 100 LBS OF ITEM 1.2 FOR SUSTAINING PRODUCTION. ALL OF ITEM 1.1.1 WAS TO BE SHIPPED IN BY 8/7/62, AND LACK OF THAT MATERIAL IS HOLDING UP DEVELOPMENT. IF NECESSARY, WE CAN HOLD OFF FOR A WEEK OR TWO ON ALL BUT 15 LBS OF ITEM 1.2, BUT IT MUST BE SUITABLE FOR PRODUCTION

R L CHRXXX CHURCHILL

3RD MESSAGE

ATTN J A SPANGLER

CONFIRMING PHONECON THIS DATE, IN ORDER TO SUPPORT DEVELOPMENTAL DRILLING, M AND C REQUESTS YOU SHIP ZIRCALOY PIECE TO BAYLIS ON 10/8 AT THE VERT LATEST

R L CHURCHILL

File

To AEC

WAFD-MAC-FUR-134

June 20, 1962

Manager,
Pittsburgh Naval Reactors Office
U. S. Atomic Energy Commission
P. O. Box 1105
Pittsburgh 30, Pennsylvania

Attention: Mr. R. E. Long

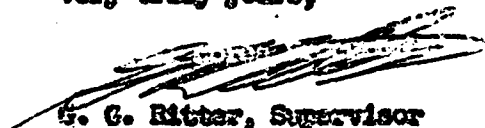
Subject: Allocation of Zirconium Sponges for
Westinghouse Purchase Order 73-Y-297600-NPI

Dear Sir:

Your Supplement Number 1 to Allocation Notice Number 26 allocated 18,000 and 24,000 pounds of zirconium chunklets to Metals & Controls during the respective months of May and June, 1962. You are requested to reduce the June allocation to 12,000 pounds, and to place the remaining 12,000 pounds in an unscheduled category until some time later in 1962.

This requested change is necessitated by an alteration in Metals & Controls schedule of zirconium conversion, and is in response to their request for a delay in the allocation of 12,000 pounds.

Very truly yours,


G. C. Ritter, Supervisor
Naval Cores Procurement Department

/lcc

cc: D. B. Blumstein
E. H. Hoffman
L. B. Faus
B. G. Rieck
K. W. Schenck

J. A. Boeke, Jr.
J. E. Howell
E. L. Jull
F. W. Hackett
P. F. Dundon

JAS
MAT-CJB-62-194

May 21, 1962

U. S. Industrial Chemical Company
E. 21st Street and State Road
Ashtabula, Ohio

Attention: Mr. Fred Fahner, Operations Manager
Metals Reduction Division

Subject: SUPPLEMENT NUMBER ONE TO ALLOCATION NOTICE
NUMBER 26 UNDER CONTRACT AT(11-1)-389

Gentlemen:

This letter is Supplement No. One to Allocation Notice No. 26 under Contract AT(11-1)-389.

The purpose of this Supplement No. One is to allocate the following quantity of zirconium chunklets to Metals and Controls, Inc. or its designee for the supply of Naval reactor cores or such other use as may be directed or approved by this office:

May 1962	18,000 lbs.
June 1962	24,000 lbs.

The total quantity allocated under Allocation Notice No. 26 is increased to 54,000 pounds.

The price will be \$5.436 per pound loaded F.O.B. carrier your plant at Ashtabula, Ohio. No other change is made to Allocation Notice No. 26.

Very truly yours,

C. J. Burkhead
Special Reactor Materials Branch
Materials Division

cc: G. Howland, M & C, Attleboro, Mass.
R. Churchill, M & C " "
J. Monaghan, WEIC, Ashtabula, Ohio
E. Salucko, WEIC, Ashtabula, Ohio

*Cores
from oil 11 Bettis*



WAFD-NAC- 731

From Bettis Atomic Power Laboratory

Date November 14, 1962

Subject Cost Estimates

BETTIS ATOMIC POWER LABORATORY

TO: Mr. R. B. Ball
Mr. F. W. Hassett
Mr. J. A. Heeke, Jr.
Mr. L. B. Prus
Mr. B. G. Rieck

Ref: (a) WAFD-NAC-387 dated 3-28-62
(b) WAFD-NAC-425 dated 4-30-62

cc: Mr. I. Beaker
Mr. J. F. Hooper
Mr. W. H. Linton
Mr. A. Cavalcante
Mr. T. J. Hasley
Mr. J. A. Spangler

Reference (a) assigned prime responsibilities for cost estimating and cost control within the Naval Cores Department as follows:

Cores

Procurement (J. A. Heeke)

Bettis furnished items and new designs

Planning & Control (B. G. Rieck)

Changes to existing PNRO contracts and estimates on proposed PNRO contracts

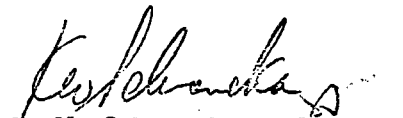
Core Contractor Operations (F. W. Hassett)

In addition, reference (b) assigned responsibilities for specific type changes to prototype cores as follows:

Mr. Heeke will provide estimates for control rods and Zircaloy structurals and will consult with Mr. Linton's Engineering Group in preparation of these estimates.

Reference (b) is now superseded by this letter and the above should read:

Mr. Heeke will provide estimates for control rods and Zircaloy structurals and will consult with Mr. Rieck's Planning and Control Group in preparation of these estimates.


K. W. Schwanekamp, Manager
Naval Cores Department

Corr
from other
Bettis



WAPD-NAC(CC)-620

From Bettis Atomic Power Laboratory

Date November 28, 1962

BETTIS ATOMIC POWER LABORATORY
Bettis Site

Subject [REDACTED]
Procedures

Mr. J. J. Ayala
Mr. R. B. Bell
Mr. M. J. Carroll
Mr. A. Cavalcante
Mr. P. A. Halpine
Mr. T. J. Hasley
Mr. J. A. Heeke

Mr. H. B. Hunter
Mr. R. M. Matyas
Mr. J. R. Mayer
Mr. J. C. McDiarmid
Mr. W. H. McKim
Mr. L. B. Prus
Mr. B. G. Rieck

Mr. G. G. Ritter
Mr. P. Ruzicka
Mr. K. W. Schwanekamp
Mr. F. L. Shubert
Mr. J. A. Spangler
Mr. F. G. Stengel
Mr. P. A. Veres

We are now required to obtain core contractor concurrence [REDACTED] before the Navy will sign off those INDR's. In order to determine the proper procedures to follow, a meeting was held in my office on November 21, 1962 and was attended by a number of Bettis personnel. The procedures that were agreed upon are listed in sequence in Attachment I to this letter. The steps through which the INDR's proceed are shown in flow chart form in Attachment II to this letter.

Although the procedures are self-explanatory, a few comments on some of the steps will help.

Steps 10 and 11 in the procedure differ from the procedure previously set up by Purchasing (McDiarmid). Purchasing previously had intended to prepare the core contractor approval record and forward these to the contractor for action. It was determined in the meeting that the INDR's and approval records would be handled more expeditiously if they were forwarded to the core contractor through the Bettis Resident Supervisor and it would then be his responsibility to see that rapid action was taken by the core contractor.

In step 12, it is expected that the core contractor may want to discuss the INDR with Engineering and QC people at Bettis. There is no objection to this being done.

In step 14, you will note that the Bettis Resident Supervisor is to make all efforts to obtain acceptance of the INDR's.

In step 15, it should be noted that if the INDR has been rejected by the core contractor it will be discussed [REDACTED] and if the material can be used at Bettis it will be so assigned, otherwise even though

Bettis has indicated acceptance of the INDR, the fact that the core contractor has rejected it is cause enough to reject this material back to the material supplier.

[REDACTED]
in my office and will be attended by Mr. Shubert from Core Engineering, Mr. Carroll from Production, a representative from QC, a representative from Purchasing, and myself. Other personnel will be invited as required.

Your comments on these procedures are requested although they are in effect immediately since we are already involved [REDACTED]
The handling of fuel element INDR's will be the subject of a separate letter.

Frederick W. Hassett

Frederick W. Hassett, Manager
Core Contractor Operations
Naval Cores Department

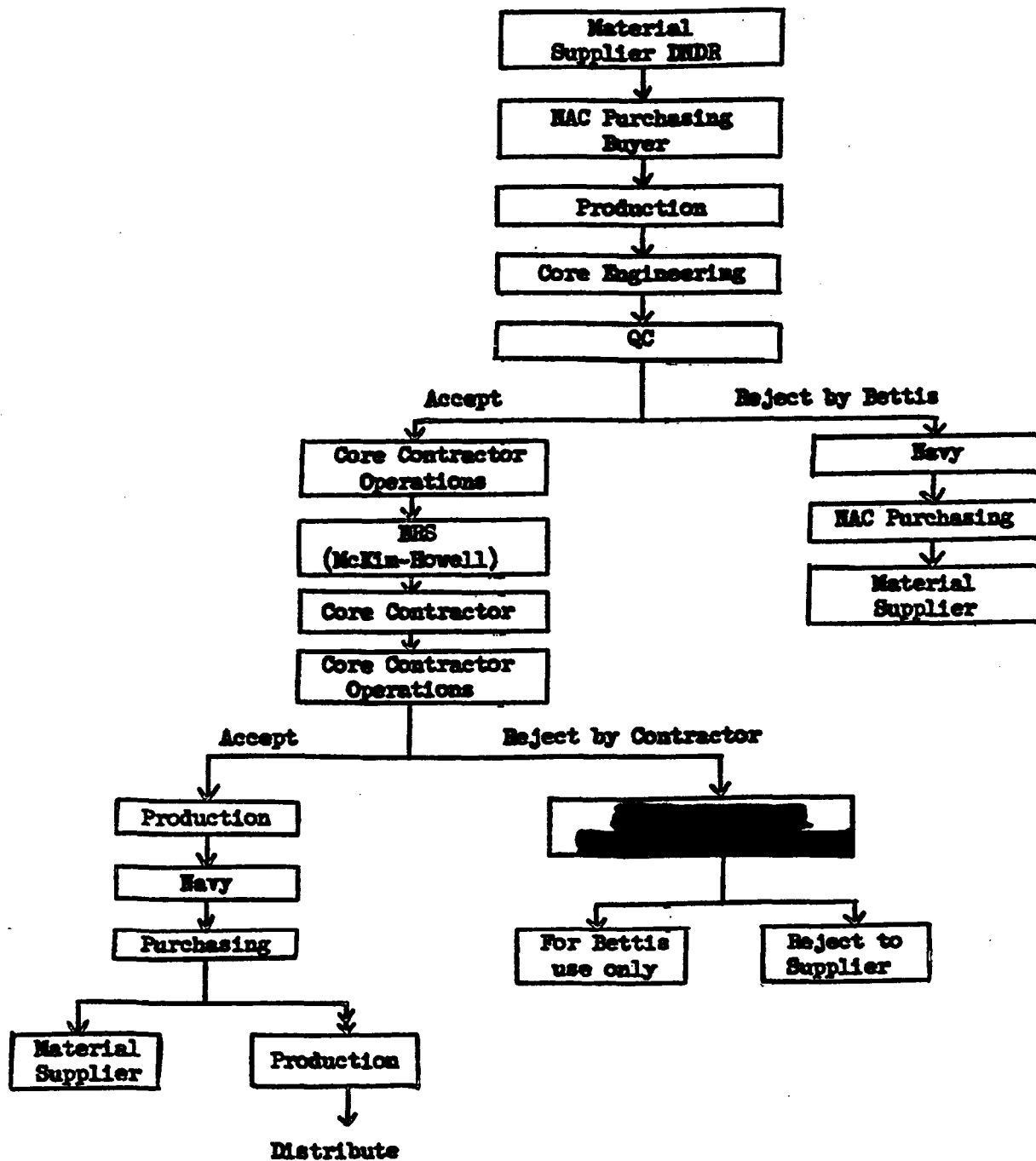
dbt

Attachment

ATTACHMENT I

1. Supplier INDR sent to Purchasing (Buyer)
2 Mats
2. Purchasing hand carries to Production (M. J. Carroll)
2 Mats
3. Production hand carries to Core Engineering (F. L. Shubert)
2 Mats
4. Core Engineering acts and INDR picked up by Production
2 Mats
5. Production hand carries to QC (P. Ruzicka)
2 Mats
6. QC acts and INDR picked by Production (M. J. Carroll)
2 Mats
7. If reject, Production hand carries to Navy (A. Sabol)
2 Mats
8. If reject, Production hand carries to Purchasing (Buyer) who obtains McDiarmid's signature and forwards to supplier.
9. If accept by HCE and QC, Production hand carries 4 copies to Core Contractor Operations (Ritter and/or Matyas) and sends 2 copies to HCE (Shubert) and 2 copies to QC (Ruzicka).
10. Core Contractor Operations will prepare a Core Contractor Approval Record in 3 copies for each core contractor involved.
11. Core Contractor Operations sends 3 copies of Approval Record with 3 copies of INDR to Bettis Resident Supervisor (McKinn or Howell).
12. BRS will obtain Core Contractor disposition.
NOTE: At this point contractor may discuss INDR with Bettis people.
13. Core Contractor signs all three approval forms, retains one and gives 2 to BRS.
14. BRS forwards 2 copies to Core Contractor Operations after having exhausted all possible resolution on any INDR's to be rejected.
15. If INDR has been rejected by Core Contractor, Production obtains it from Core Contractor Operations and hand carries [REDACTED] meeting. At this meeting it will be assigned to Bettis if there is a need for the material. If material is not needed at Bettis, Production hand carries to Navy for signature. Production then hand carries to Purchasing (Material buyer). Purchasing rejects material to supplier.

16. If INDR accepted, Core Contractor Operations hand carries Approval Form (2 copies) to Production.
17. Production hand carries INDR mats (2 copies) and Approval Forms to Navy (Sabol) who acts.
18. Production hand carries INDR mats and 1 copy of Approval Form to Purchasing (Material Buyer).
19. Purchasing signs and runs off their copies sending approved copies of INDR only, to material supplier. One mat is returned to Production who distributes copies to all concerned including Navy.

ATTACHMENT II

PROCESS APPROVALS [REDACTED]

The Seller is responsible for establishing and controlling the manufacturing process within the terms and requirements of this order so as to produce a final product meeting all order requirements. Prior to initiating fabrication, Seller shall submit to Westinghouse, for review and approval, detailed process flow sheets and all associated process and inspection specifications and working drawings. The inspection specifications shall contain the release points of components for further fabrication, if applicable. Release points are defined as steps where components are joined together or where further operations may not permit subsequent inspection for a given dimension, characteristic, finish, or chemical content. All components shall be made in conformance with the approved process flow sheets and specifications. This attachment applies regardless of whether work is performed by Seller or by a lower tier subcontractor.

Approval of manufacturing and inspection procedures does not relieve the Seller of the responsibility for producing a product which conforms to all requirements of the order. By such approval Westinghouse in no way assumes any part of the Seller's responsibility for design or procedures, or the satisfactory performance of resulting equipment for the purpose intended. Failure on the part of the Seller to obtain Westinghouse approvals as required will subject the work or component affected to rejection. Any conflicts noted within this attachment and between the other order specifications, standards and publications shall be brought to the attention of Westinghouse prior to any action on the part of the Seller.

cc: Mr. Joseph Heeke, BAPL
Mr. Ed McKay, &C

METALS & CONTROLS INC. P. O. BOX 898 • ATTLEBORO, MASS. • CASTLE 2-3800

A CORPORATE DIVISION OF TEXAS INSTRUMENTS INCORPORATED

November 27, 1963

Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh, Pennsylvania 15230

Attention: Mr. J. A. Spangler

Reference: WAPD-NAC-PA-3526

Subject: Deviation Request - "Degradation of Specification
Requirements"

Gentlemen:

The reference letter requested that we discontinue use of the former Deviation Request title (old form 73651) and adopt the document title of "Degradation of Specification Requirements."

We have, since your letter, received similar requests [REDACTED] from both Pittsburgh Naval Reactors Office and Schenectady Naval Reactors Office. We have concurred with this request on those contracts.

The purpose of this letter is to advise you of our agreement to abide by your request as applied to WAPD-203. However, we wish to formerly record that in our opinion the application of this term to deviation requests on this specific order is not completely appropriate. You will remember that prior to execution of this contract it was recognized that many product drawing and specification requirements had not been demonstrated to be achievable. Likewise, many product acceptance standards at the time of contract signing remained undefined, pending actual determination of process capability. We believe there is a difference between application of this [REDACTED] considerable product fabrication experience prevails as opposed to prototype work which necessarily involves development, change, and flexibility in product specifications and acceptance standards as the work progresses.

We will proceed with alterations to forms in our possession and by December 9 all Deviation Request forms emanating from Metals and Controls will bear the new title as requested.

Very truly yours,

George P. Howland
Manager, Navy Nuclear Products

GPH/bs

WESTINGHOUSE ELECTRIC CORPORATION

(Federal Code 94259)

NR11

"GENERAL REQUIREMENTS FOR THE ASSEMBLY
OF NUCLEAR CORE COMPONENTS."

INFORMATION CATEGORY

Unclassified
J. H. Smith 10/9/61
Authorized Classifier Date

BETTS ATOMIC POWER LABORATORY
P.O. BOX 1468, PITTSBURGH 30, PA.

Issued	Oct 6, 1961	Rev.	19	Rev.	19
	J. H. Smith 10/4/1961		19		19
	J. N. Cohen 10/9/1961		19		19
	David J. Smith 10/11/1961		19		19
	J. V. Dupont 10/17/1961		19		19
	19		19		19

GENERAL REQUIREMENTS FOR THE ASSEMBLY OF NUCLEAR CORE COMPONENTS

1. SCOPE

- 1.1 This specification covers the general requirements for the assembly and preparation for shipment or storage of Nuclear Core Assemblies, Subassemblies, and components for water cooled reactors.

2. APPLICABLE DOCUMENTS

- 2.1 The following specifications and documents, of the revision stipulated in the contract or Purchase Order, shall form a part of this specification:

Military Specifications

- MIL-C-19874 "Cleaning Requirements for Nuclear Primary Coolant Equipment including Piping Systems."
MIL-N-19828 "Nuclear Power Plants, Preparation for shipment and storage of components and repair parts which are exposed to the Primary Coolant."
MIL-Q-9858 "Quality Control System Requirements."

Military Standards

- MIL-STD-271 "Non-Destructive Testing Requirements For Metals."

Naval Reactors Specifications

- NR-3 "Cleanliness Requirements for Nuclear Core Components."

Navy Department Standards

- NavShips 250-1500-1 "Standard for Welding of Reactor Coolant and Associated Systems and Components for Naval Nuclear Power Plants (Pressurized, Water Cooled Systems)."
NavShips 250-1500-3 "Design Criteria and Handling Precautions to Preclude Binding in Threaded Joints for Primary System Components in Nuclear Plant Service."

Other Publications

- AEC Manual Volume 7000, Part 7400, "Materials Accountability."
NBS Handbook #69 "Maximum Permissible Amounts of Radio Isotopes in Human Body and Maximum Permissible Concentration in Air and Water."
NAVEXOS P-1034 Appendix A - "Manual for Source Inspection and Administration of Navy Procurement."

- 2.2 Any conflicts noted within the specification and between this and referenced specifications, standards, and publications shall be brought to the attention of the contracting agency prior to any action on the part of the manufacturer. This specification shall take precedence over all specifications, standards, and publications referenced herein.

3. REQUIREMENTS

3.1 General Requirements

- 3.1.1 Nuclear Core assemblies, subassemblies, and components shall be assembled, packaged, and shipped in accordance with the requirements of this specification and in accordance with the applicable drawings and specifications.
- 3.1.2 Welding, [REDACTED] shall conform to the requirements of NavShips 250-1500-1. [REDACTED]
[REDACTED]

3.2 Cleanliness

- 3.2.1 Assembly operations shall be performed in a clean room that meets the requirements of MIL-C-19874.
- 3.2.2 All hand tools used in assembly operations shall meet the requirements of MIL-C-19874.
- 3.2.3 All fuel assemblies, control elements, and zirconium alloy structural components shall meet the cleanliness requirements of NR-3 and all other components and assemblies that are part of the core shall meet the cleanliness requirements of MIL-C-19874, before, during, and after final assembly. The cleanliness shall be maintained until core installation is completed.
- 3.2.4 No oil will be permissible on any piece of assembly tools. All core assembly tools shall be chemically degreased at intervals of such frequency as to meet specified cleanliness.
- 3.2.5 During core assembly, extreme care shall be taken to prevent foreign material from being introduced into core components. Openings shall be adequately protected by caps or covers against entry of foreign material including the protective device itself. Small articles shall be attached by an adequate lanyard to the user or to a fixed piece of equipment. A formal and strict written record of accountability for all small tools and equipment used in these operations shall be maintained. Care shall be taken that the internals of the components are kept entirely free from contamination such as dirt, scale, grease, oil, metal chips, other foreign material or particles. Special attention shall be given to the clothing worn while working on nuclear power plants or components in

which there are openings. Precautions shall be taken to eliminate the possibility of accidental loss of articles such as buttons, badges, jewelry, pencils, pens, coins, spectacles, dentures, hearing aids, etc. Necessary monitors such as film badges must be securely fastened inside the clothing. Methods of detection and removal of foreign materials in reactor system components shall be anticipated and each major manufacturing or building activity shall provide itself with suitable detection and removal equipment in the event that foreign materials has entered the system in spite of all preventative measures. Personnel working on the assembly or repair of reactor components shall be properly instructed in the precautions to be taken and the means available to extract such material should an accident occur. The unplanned introduction of any foreign material including tools, into a core component, which results in a delay in operations, shall be treated as an incident which shall be reported to the designated contracting agency representative immediately. Drip pans or catch basins shall be provided on all cranes and hoisting equipment (when lubricating oils are present for the operation of equipment) to prevent the entrance of such oils into core parts or assemblies.

- 3.2.6 The eating and drinking of food shall be prohibited in the core assembly area.

3.3 Safety

- 3.3.1 Some materials used in these operations are hazardous. Manufacturers should contact their local safety organization for detailed information.

CAUTIONS: Work with radioactive materials shall be done in such a manner that no person will receive more than the permissible amount of external radiation or be exposed to more than the maximum permissible concentration of airborne radioactive material. Refer to National Bureau of Standards Handbook #69.

Criticality hazards associated with enriched fuels shall be evaluated and controlled.

- 3.3.2 The manufacturer shall be responsible for establishing and controlling the safety practices necessary to protect life and property. Safety aspects are, for the most part, covered by the general section of the purchase order or contract. It is the responsibility of the manufacturer to be cognizant of safety requirement changes as they develop. The purchaser's guidance on methods or procedures, even followed by acknowledgement or approval, does not impute responsibility for safety to the contracting agency. Among other things, particular attention shall be given to the following:

- 3.3.3 Special precautions shall be taken to prevent fires in or near the core assembly area.

- 3.3.3.1 Any combustible materials such as plywood, shipping boxes, wooden tools or apparatus, paper cartons, rags, felt pads, full or partially full cans of paint, acetone, alcohol, or any combustible solvent shall be kept to a minimum during core assembly operations.
- 3.3.3.2 Electrical apparatus shall be disconnected or shut off during overnight shutdown periods. Electrical apparatus necessary to meet the requirements of Item 3.6.5 in the assembly area may remain operative if proper safety precautions are followed to avoid fire or other hazards.
- 3.3.3.3 Only CO₂ fire extinguishers shall be permitted in the core assembly area.
- 3.3.3.4 CO₂ fire extinguishers shall be readily available within the core assembly area. If at all possible, the use of fire extinguishers directly on core components shall be avoided.
- 3.3.3.5 Smoking shall not be permitted in the core assembly area.
- 3.3.4 When more than one fuel component is in the assembly area, the fuel components shall be stored in containers or in racks which shall assure adequate separation between the fuel components to prevent criticality even if the area is flooded with water.
- 3.3.5 In the event of a flooded condition in the assembly area, the assembled or partially assembled core shall be prevented from going critical by the presence of control rods or the reactivity equivalent which shall have been inserted into the cluster assemblies. The reactivity equivalent poison rods shall be supplied by the contracting agency if available. Otherwise, the poison rods shall be procured by the vendor under a separate negotiation with the contracting agency. Poison rods shall be built to the contracting agency's design or to a design approved by the contracting agency.

3.4 Accountability

- 3.4.1 Suitable accountability procedures must be established and maintained to account for all fissionable material at every step in the manufacturing process. Such procedures shall be in accordance with existing AEC regulations (Vol. 700 Part 7400, Materials Accountability, AEC Manual).

3.5 Prohibitions

- 3.5.1 The surfaces of the reactor fuel assemblies and components shall not be contaminated with fissionable material. The requirements of NR-3 and NR-5 shall be met. The surfaces of all major components shall be inspected for such contamination. The average alpha particle activity per unit area on any surface shall be no greater than the alpha activity from a standard test specimen [REDACTED]. Special precautions shall be taken to prevent this contamination and shall include smear test monitoring, ventilation control, traffic control, establishment of clean areas, segregation of process areas and equipment, and the preparation of a sampling plan. These precautions shall be specified in a cleaning procedure to be submitted to the contracting agency for approval.
- 3.5.2 Mercury contamination shall be prevented by avoiding the use of mercury or its salts in the manufacture, test or assembly of components. The requirement prohibits the use of mercury manometers, thermometers, etc., where such use could result in contamination of the reactor core or its components.
- 3.5.3 Note caution per reference NR-3 and avoid the use of halides (halogens) in contact with core component or assembly equipment.
- 3.5.4 The use of chloride containing packaging materials, such as polyvinyl chloride shall be prohibited.
- 3.5.5 Nickel-base alloy and austenitic stainless steel components shall be free of surface iron contamination. Details of tests for contamination and procedures for cleaning shall be submitted to the contracting agency for approval.

3.6 Facilities

- 3.6.1 Adequate indoor clean room space shall be provided for core structures, for the storage of components, assembly tools and spare parts, and for the placing of shipping containers during loading.
- 3.6.2 Unless otherwise specified, core assembly structures and all other equipment necessary to comply with the inspection and assembly requirements outlined in this document shall be provided by the vendor.
- 3.6.3 The core assembly facility shall contain adequate area to accommodate the shipping containers. A space of sufficient size to facilitate loading shall be readily available and near the entrance to the assembly area.

3.6.4 The air in the assembly area shall be clean in accordance with the requirements of NR-3 Specification.

3.6.5 The temperature of the air in the assembly area shall be maintained within 68 to 72 degrees Fahrenheit.

3.7 Special Tools and Fixtures

3.7.1 All special tools, instrumentation, fixtures, and other equipment, including lifting gear and fixtures, necessary to assemble core component parts and not supplied by the contracting agency shall be designed and procured by the manufacturer. Appropriate and adequate tests shall be used in assembly operations in the event that a controversy over appropriateness or adequacy occurs, the final decision shall be made by the contracting agency.

3.7.2 Approval Special Tools and Fixtures - The design of the following tools, jigs, fixtures and equipment shall be approved by the contracting agency prior to their fabrication:

Fuel assembly handling fixtures.

Fuel assembly support handling fixtures.

Instrumentation insertion tools.

Assembly stand.

Special fixture, tools and gages for determining compliance with applicable specifications.

3.8 Lifting Devices

3.8.1 The crane(s), craneways and lifting gear and fixtures to be used in handling assemblies or components shall be certified by a licensed professional engineer as being capable of supporting a static load equal to 150% of the total load to be lifted and a dynamic load equal to 125% of the total load to be lifted.

3.8.2 Within three months prior to lifting a core, the core components or the shipping container, the crane(s), craneways and lifting gear and fixtures to be used in accomplishing the lift shall have a dynamic load test performed at 125% of the total load to be lifted and a static load test to be performed at 150% of the total load to be lifted. The tests to be conducted shall meet the following requirements:

3.8.2.1 If possible, the crane speeds and motions shall be the same as those encountered in the actual lift. Otherwise, similar motions of the crane shall be used.

3.8.2.2 The tests shall be conducted with the lifting equipment to be used in making the actual lift.

- 3.8.2.3 If possible, the personnel conducting the test shall be the personnel that will make the actual lift.
- 3.8.2.4 The crane brakes and controls shall be checked during the test lift.

3.9 Assembly

- 3.9.1 All parts shall be final machined, cleaned, inspected, accepted, properly tagged, and protectively packaged prior to shipment to the assembly area. (All components under defect shall be so tagged and not admitted to the assembly area) Polyethylene packaging material when used shall be colored or tinted with an approved, non-contaminating, coloring agent.
- 3.9.2 All threaded fastenings shall be engaged and seated by a torque not exceeding 1 ft/lb. before final torquing per drawing requirements, or in accordance with NavShips 250-1500-3.
- 3.9.3 Calibrated torque wrenches used in the assembly of the core shall be accurate within 2% of the maximum scale reading.
- 3.9.4 For threaded joints and pilot fits colloidal graphite suspended in isopropyl alcohol shall be the only lubricant permitted. The lubricant shall be used only where needed for assembly and in the thinnest film required for adequate lubrication. For close fit application, such as dowel pins, dilutions of between 9:1 and 12:1 may be used instead of the "standard" dilution of 4:1 (by volume) to minimize interference.
- 3.9.5 Practices to prevent seizing and galling shall be used in accordance with NavShips 250-1500-3.
- 3.9.6 Long slender components shall be handled in such a manner as to avoid sidewise strains. The possibility of galling or hang-up of components at assembly shall be avoided by using preassembly inspection and test, specified lubrication and force monitored insertions. Components furnished by the contracting agency shall be unpacked and handled in accordance with approved procedures.
- 3.9.7 Fuel assemblies shall have their true weight ($\pm 1/2\%$) recorded at assembly. Other core components shall have their true weight ($\pm 1-1/2\%$) recorded at assembly.
- 3.9.8 All small tools, parts, and components used over or around a core during the assembly shall be secured to the user or to stationary equipment until removed from or installed on the core.

- 3.9.9 An accurate inventory shall be maintained on all small tools, parts, and components entering and leaving the immediate assembly area.
- 3.9.10 All identification marking of components or assemblies shall be in a location specified on the applicable drawing or as otherwise approved by the contracting agency. The type of marking and limitations shall be as specified in the purchase order or as specified on the applicable drawings.
- 3.9.11 A record of the identity and location of components in the assembly shall be maintained by the manufacturer.
- 3.9.12 All packaging material, protective covering and inserts, dust shields, except those specifically approved by the contracting agency for use as part of the shipping equipment, shall be moved prior to the installation of the core cartridge, core package, power package, or core component into the shipping container. All tape and residual adhesive material and stains resulting shall be removed prior to placing the assembly or component into any shipping container.
- 3.9.13 Assembly fixtures or support structures supplied by the manufacturer for supporting an assembly, subassembly or component during assembly, testing or inspection shall be designed with an allowable design stress at normal loads equal to 20% of the ultimate stress or 50% of the 0.2% offset yield stress, whichever is smaller, of the structural material and shall be capable of supporting the power unit such that the deflections encountered shall not interfere with the inspection measurements.

3.10 Procedures

- 3.10.1 The manufacturer shall be responsible for establishing and controlling the assembly, disassembly, and preparation for shipment processes. Detailed assembly procedures, if furnished by the contracting agency, are intended to be used only as a guide to the manufacturer in carrying out the above responsibility. The manufacturer may, if he chooses, use these detailed assembly procedures as a basis for preparing his procedures. The manufacturer shall be responsible for product quality. The fact that a procedure supplied by the contracting agency was followed does not in itself constitute a release of the manufacturer from responsibility for any resulting poor quality. Prior to any assembly operations, the manufacturer shall submit, for review and approval by the contracting agency, a detailed assembly procedure including all associated specifications applying to assembly of the core.

3.10.2 All the manufacturer's detailed assembly procedures shall be subject to approval by the contracting agency. These shall be submitted in time for proper evaluation by the contracting agency and shall include:

- (a) A detailed assembly procedure covering the methods and inspections that will be employed to meet the requirements of all pertinent contracting agency's specifications and drawings.
- (b) A description of the tools, jigs, fixtures and techniques to be used during assembly of the core cartridge or core parts. This description shall include a sufficient quantity of drawings, deflections and stress calculations, etc. to permit adequate evaluation of the tools or fixtures.
- (c) A description of the inspection techniques and inspection equipment to be used during the inspection of the core cartridge and components. Drawings of special inspection equipment shall be included to permit evaluation.
- (d) A detailed procedure covering the disassembly, if required, and preparation for shipment or storage of the core cartridge, core package, or power package.
- (e) A detailed procedure for shipment of core components prior to final assembly, including drawings showing design and shock mounting data, if required, for the shipping containers.
- (f) A detailed procedure covering the precautions taken to insure nuclear safety and the prevention of foreign objects or materials from entering the core cartridge at any time.

3.10.3 Repair Procedure - The manufacturer is responsible for establishing and controlling repair procedures. The manufacturer shall obtain written approval from the contracting agency of any repair procedure which may affect dimensions or attributes of the finished assembly which cannot be inspected by non-destructive means before such procedures are used on production components.

3.10.4 Process and Repair Procedure Modification - All changes in approved process flow sheets, process specifications or repair procedures shall require written approval from the contracting agency, except as stated in 3.10.5 (Non-critical Process and Repair Operations). The manufacturer may, at his own risk, make a change to a process or repair procedure during production, prior to obtaining written approval, provided the contracting agency is notified before such action and the affected components are tagged by the contractor and are not carried into the next higher stage of pro-

duction before written approval is obtained. The next higher stage is defined as the next stage in fabrication which would bring the affected component into assembly with another like or unlike component. If process modifications are proposed after the process has been qualified as specified in 3.2 (Process Approval), the manufacturer shall be required to requalify the process unless he can otherwise adequately demonstrate to the satisfaction of the contracting agency that assemblies manufactured by the proposed modified process are in accordance with this specification.

3.10.5 Non-Critical Process and Repair Operations - At the request of the manufacturer, the contracting agency may designate certain operations in approved process flow sheets, process specifications, or repair procedures, as noncritical operations. The manufacturer may make process or repair procedure modifications in those operations which have been designated non-critical without approval of the contracting agency. Also, at the request of the manufacturer, the contracting agency may designate certain sequences of operations as non critical sequences. Operations within such sequence may be interchanged without approval of the contracting agency. A permanent record of all such process and sequence changes shall be maintained by the manufacturer.

3.10.6 Welding Process - Welding procedures and qualifications shall conform to the requirements of NavShips 250-1500-1.

3.10.7 Passivating - Nickel base alloy parts shall be passivated whenever they are exposed to ferritic (iron or steel) or iron oxide particles. Procedures used for passivation must be submitted to the contracting agency for approval prior to use (3.2). Parts containing crevices, dissimilar welds, non-heat-treated weld joints, or sensitized areas must not be passivated.

4. QUALITY ASSURANCE

- 4.1 The manufacturer shall perform the inspection, supply the equipment and services, and institute systems necessary to provide assurance that the assemblies and component parts meet the requirements of MIL-Q-9858, NAVEXOS P-1034, Appendix A and the applicable drawings and specifications.
- 4.2 Any material or component not meeting specification or drawing requirements shall be rejected. Such a component shall not be released for the next higher stage of production until its disposition is approved through waiver rework instructions, or other authorized procedures.
- 4.3 All materials, records, test data, equipment, facilities and work relating to this specification shall be available for inspection by representatives of the contracting agency.

- 4.4 When inspection is conducted at the place of manufacture by a representative of the contracting agency, the inspector for the contracting agency shall be furnished free of cost, all reasonable facilities, and assistance necessary to verify that the component parts and assemblies are in accordance with this specification.
- 4.5 The manufacturer shall apply measurement accuracy and precision factors to the measured values in determining compliance with requirements for those dimensions that cannot be determined with standard measuring devices (such as micrometers).
- 4.6 The manufacturer shall submit to the contracting agency for approval, a description of non-standard or unusual inspection devices and methods which are to be used in meeting the requirements of this specification.
- 4.7 When inspection by the contracting agency is required during the manufacture, assembly, or testing of unit cell and reactor cell assemblies, the manufacturer shall notify the representatives of the contracting agency at least 48 hours prior to the time of such operations.

4.8 Material Identity

- 4.8.1 The manufacturer shall submit a procedure for approval by the contracting agency which shall be designed to assure positive identifications of the materials used in the construction of components and assemblies. This procedure shall include:
 - (a) An inspection file for each assembly or all components not fabricated by the manufacturer.
 - (b) A procedure to permit easy tracing of all defects previously noted and accepted for each component.
 - (c) A procedure to permit tracing of any material being used for the components to the mill ingot identification and analysis.

4.9 Surface Inspection

- 4.9.1 Each component shall have a final visual examination for surface defects prior to the next stage of assembly. Surface cracks, folds, burrs, or raised metal defects are not permissible.

Nicks, scratches, dents, and other minor surface flaws shall be within limits allowed by applicable specifications and drawings.

4.10 Acceptance Inspection

- 4.10.1 In addition to the certification and warranty record for each assembly and the record of the required as-built dimensions each assembly shall undergo a final acceptance inspection just prior to packaging and shipment. The inspection

shall be verified by a signed check-off list which shall cover all applicable items. The scope of the check off list shall be submitted for contracting agency approval per paragraph 5.2.

4.11 Certification

- 4.11.1 Each assembly shall be accompanied by a warranty record which covers all deviations, the location of any repair, and the dispositions approved by the contracting agency. A certification is required for each assembly stating that the assembly meets all requirements of this specification and the applicable drawings except for those deviations and dispositions which have been approved by the contracting agency.
- 4.11.2 A completed assembly accepted by the contracting agency's inspector, at the place of assembly, shall be subject to rejection should assembly errors or omissions directly attributable to the assembly agency be revealed subsequent to the acceptance.
- 4.11.3 Any inconsistencies, errors, mechanical failure, uncertainties, contradictions to reference drawings, or specification or any other assembly problems shall be reported to the contracting agency in detail. Any action taken before the comments of the contracting agency are received shall be at the full responsibility of the manufacturer.

5. DATA AND REPORTS

5.1 Photographs

- 5.1.1 When required by the purchase order the manufacturers shall obtain and supply photographs showing each type of photograph and assembly.
 - 5.1.1.1 Subjects and views shall be selected to show:
 - (a) Significant stages in assembly.
 - (b) Completed assemblies with associated components to illustrate functional relationships (exploded view).
 - (c) Repairs and authorized deviations.
 - (d) Unique or complex assembly and test set-ups and shipping arrangements.
 - 5.1.1.2 Photographs shall have a size scale reference, and a title block including subject and date.
 - 5.1.1.3 Photographs shall be 8" x 10" glossy prints and shall be furnished in a quantity and at such times as shall be specified in the purchase order.

5.2 Records

5.2.1 The vendor will maintain an indexed file of all inspection and test data from each assembly, which must be available for use by the contracting agency within 30 days after completion of the assembly operations. The file shall include such items as:

- (a) Mill Test Results
- (b) Reference Sample Test Results
- (c) Index List for Heat Number and Reference Samples
- (d) All Production Welding Records Including Approval Weld Qualification References.
- (e) Radiograph Location Sketches, Records and Films, Qualification of procedures and Personnel.
- (f) U-235 Contamination Test Results
- (g) Preparation for Shipment Records
- (h) Routine or Periodic Inspection Records
- (i) Heat Treatment Records
- (j) Liquid Penetrant Inspection Records, Qualification of Procedures and Personnel.
- (k) Ultrasonic Inspection Records
- (l) Corrosion Test Records
- (m) Records of Actual Amount of U-235 [REDACTED] Circaloy contained in each fuel assembly.
- (n) Certification that all material and component parts used conform to applicable specification and drawings.
- (o) All other pertinent material, fabrication, tests, inspection, and certification data.

5.3 Reports

5.3.1 All required data shall be forwarded, prior to or at the time of shipment, to the contracting agency as one reproducible and three (3) copies on 8-1/2" x 11" paper only, signed and dated by a responsible representative of the vendor. All data shall be submitted in an orderly, comprehensible manner. Each item shall refer to an appropriate drawing number, specification number, approved engineering change, and/or approved waiver which shall identify the acceptance limit.

5.3.2 The detailed core assembly requirements as specified in the applicable contracting agency specification and in this specification shall be completed and the required data recorded and submitted to the contracting agency at time of delivery of the assembly or components.

6. PREPARATION FOR SHIPMENT

6.1 The shipping containers shall meet the applicable requirements of MIL-B-19828 and they shall be cleaned in accordance with MIL-B-19874.

- 6.2 It shall be the responsibility of the vendor to load the core cartridge, core package or power package into containers for shipment or storage in accordance with applicable drawings and specifications. The termination of the handling responsibility of the vendor shall be negotiated separately between the contracting agency and the vendor. Any damage detected at the contracting agency's receiving inspection shall be evaluated and the responsibility allotted to the vendor in a negotiation between the contracting agency and the vendor.

NOTICE: When drawings, specifications, or other data supplied by the contracting agency are used for any purpose other than in connection with a definitely related procurement operation by the assembly agency, then the contracting agency incurs no responsibility nor any obligation whatsoever, and the fact that the contracting agency may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.



Westinghouse Electric Corporation

Bettis Atomic Power Laboratory

Box 1468, Pittsburgh 30, Pa.

WAPD-NAC-PA-966

June 20, 1962

*File
Corres
Do m & c*

Metals & Controls, Inc.
P. O. Box 898
Attleboro, Mass.

Attention: Mr. R. L. Churchill

Subject: Westinghouse Purchase Order 73-Y-297800-MPT

Procedures are attached for use by you in submittal of AR's, DMDR's and Req's during the course of the order. The procedures are as follows:

<u>Title</u>	<u>Date</u>
1. Use of Form NO. 73650 Identified as NC-5 - Request for Engineering Changes	5/17/62
2. Use of Form No. 73651 Identified as NC-6 - Deviation Notice-Disposition Request	5/17/62
3. Use of Form No. 73649 Identified as NC-3 - Approval Request	5/17/62

Very truly yours,

G. G. Ritter, Supervisor
Naval Cores Procurement Department

By J. A. Spangler
J. A. Spangler, Buyer

/lft

Attachments

May 17, 1962

I. Introduction

A. Purpose:

To establish the policy and procedure for processing core contractor requests for the acceptance of complete core materials and components which deviate from the provisions of the contract including the applicable contract drawings and specifications.

B. Policy:

1. INDR's will be submitted to Westinghouse by the core contractor for review and acceptance action as soon as the core contractor uncovers a deviation from contract drawings and specifications and makes a decision to recommend acceptance. Only deviated material or components which the core contractor deems to be acceptable should be submitted to Westinghouse on a INDR.
2. Decisions on acceptability will be based on the effect of the deviation on the service, life, safety, and performance of the components and the complete core.
3. Acceptance of the deviated material will not relieve the core contractor of his responsibility for latent defects as provided in the contract nor will it waive his responsibility for the quality of the product.
4. Should the contractor void or recall any INDR, the obligation remains upon the contractor to take action to have the component satisfy the requirements of the contract.

C. Forms:

Form No. 73651, Identified as NC 6.

D. Definitions:

1. Core Contractor - A manufacturing organization awarded a contract by Westinghouse for the fabrication of a complete core.
2. Deviation - Any violation in material from the provisions of the Westinghouse contract or requirements of the applicable drawings and specifications.
3. Approved Repair Procedure - A process description approved by Westinghouse which includes the details of all pertinent repair operations in sequence and the quality control exercised during the execution of the repair.

4. **Frequency Ratio** - The number of times a specific dimension, condition, standard, or any contract requirement has not been met by the core contractor for a specific component of a given core type in proportion to the number of units that have been examined.

II. Discussion

- A. The signature of the authorized Westinghouse Purchasing Agent on Form NC 6 will constitute contractual authorization for the final decision which may include acceptance, rejection, or diversion to other uses.
- B. Core contractors are required to make every effort to eliminate the cause of the deviation.
- C. The use of approved repair procedures does not relieve the core contractor of the responsibility for submitting INDR's for repaired materials or components which after repair do not conform with contract drawings or specifications.

III. Procedures

A. The Core Contractor shall:

1. Prepare a typewritten reproducible of Form NC 6 using Attachment 1 as a guide and indicate in the appropriate block a recommendation as to the acceptability of the deviated material. Establish the frequency ratio in accordance with instruction given in Attachment 2. All data used in determining the acceptability of the deviated material must be submitted with the INDR. Where attachments are included, these shall be in the form of duplicate original ditto masters. Only material which is considered acceptable by the contractor shall be submitted for waiver action. If the deviation is the result of the use of an approved repair procedure or the deviation is present after repair by an approved repair procedure, the repair procedure number and revision shall appear on the INDR.
2. Insure that each INDR is classified in accordance with the policies and procedures established and approved by the Division of Classification, United States Atomic Energy Commission.
3. Reproduce five copies of the INDR master and attachments. Transmit the double ditto master and three reproductions to Bettis in accordance with instructions given in Attachment 1. Transmit one copy to the resident Westinghouse Quality Engineer and one copy to the Westinghouse Resident Supervisor.
4. After disposition by Westinghouse, one set and 3 reproduced copies will be returned to the originating contractor. The contractor shall forward one reproduced copy each to the Westinghouse Resident Supervisor and the Westinghouse Resident Quality Engineer.

5. Perform repairs in accordance with approval repair procedures in those cases where the final disposition on the DADR is reject-repair.
6. Control the release of deviated components to coincide with the disposition and/or comments listed on the DADR's.

TO: PURCHASING AGENT, NUCLEAR CORE DEPARTMENT
 BETTIS ATOMIC POWER LABORATORY
 WESTINGHOUSE ELECTRIC CORPORATION
 P.O. BOX 1440, PITTSBURGH 30, PA. (1)
 ATTENTION:

P.O. NO.

(3)

CORE TYPE AND IDENTITY

(4)

DATE OF INSPECTION

(5)

DRAWING, SKETCH OR DATA ATTACHED

YES ☐

NO ☐

(6)

SERIAL NO.

(10)

DRAWING NO.

(7)

REVISION

(8)

PIECE NO.

(9)

SPECIFICATION NO.

(11)

REVISION

(12)

NAME OF PART

(13)

ACTUAL ITEM CONDITION OR DIMENSION

(14)

LIMIT OR STANDARDS APPLIED

(15)

WHAT CORRECTIVE ACTION HAS BEEN TAKEN TO PREVENT RECURRENCE OF ABOVE DEVIATION?

(16)

ORIGINATOR'S SIGNATURE

DATE

TITLE AND DEPARTMENT

(16)

SIGNATURE AND DATE	DISPOSITION	COMMENTS
BETTIE APL	APPROVAL	(18)
(17)	DISAPPROVAL	
NAVY/AEC	APPROVAL	(20)
(19)	DISAPPROVAL	

THIS FORM IS AN OFFICIAL DOCUMENT WHEN SIGNED BY THE PURCHASING AGENT AND NEED NOT BE FOLLOWED BY A CHANGE NOTICE TO THE PURCHASE ORDER.

AUTHORIZED BY:

(21)

PURCHASING AGENT

DATE

NO. (22)

1. Although the form is pre-printed with the address of the Purchasing Agent, Nuclear Core Department, in order to expedite processing, it shall be mailed directly to:

Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Attention: Manager, Core Contractor Operations
Naval Cores Department

2. Self-explanatory.
3. Self-explanatory.
4. Show not only the general type, but also the specific core identity, e.g.,
[REDACTED]
5. Self-explanatory.
6. Self-explanatory.
- 7-13. Self-explanatory. Provide complete information.
14. Describe accurately, in detail, the actual condition of the material; provide actual measurements, dimensions, or conditions.
15. Show specific requirements of contract, drawing, or specification with which the deviated material fails to conform. Also provide the frequency ratio for each dimension or condition which has not been met in addition to either the drawing number and coordinates, or the applicable specification, paragraph and sub-paragraph number which locates the deviation. (See Supplementary Instructions)
16. Self-explanatory.
- 17 -21. To be completed at Bettis.
22. Number sequentially; prefix with abbreviation of core contractor's name.

INSTRUCTIONS RELATIVE TO THE USE OF FREQUENCY RATIOS

1. Definition

The frequency ratio is defined as the proportion of the number of violations of a specific contractual requirement to the number of components inspected for that requirement and is to be applied per contract, as opposed to per core.

2. Purpose

The frequency ratio is designed to provide a convenient method by which the core contractor can evaluate what processes require refinement or improvement. It is also used by the contracting agency as a basis for modifying established design criteria to more realistic requirements.

3. Use

All frequency ratios are to be computed against the major component involved e.g., fuel elements, clusters, control rods, bottom plates, segments, wrought product, etc. The applicable specification paragraph and/or drawing location must be listed on the Deviation Notice Disposition Request (DNDR) as the violated requirement. If the deviation is against a change notice to the contract, the applicable change number is to be referenced.

4. Example

- (a) A cluster, upon examination for channel spacing, is found to exceed both the local and average channel spacing requirements. Nine clusters have been previously inspected for the same requirements, of which none failed the local requirements and two failed the average requirements.

The frequency ratios would be as follows (requirements are coded for security purposes).

For the average requirement - 3/10

For the local from average requirement - 1/10

- (b) A cluster is inspected for possible corrosion product on the heat transfer and non-heat transfer areas and is found to exceed the applicable standards for both criteria. Five clusters have been previously inspected for these requirements of which one failed to meet the standards for the heat transfer surfaces and two exceeded the non-heat transfer requirements.

The frequency ratios would be as follows:

Exceed heat transfer corrosion standards - 2/6

Exceed non-heat transfer corrosion standards - 3/6

May 17, 1962

INTRODUCTION - This instruction outlines the policy and procedure for the use of subject form by prime core contractors to report errors on drawings and specifications or to request approval for changes in design or for the substitution of materials. It is effective on receipt of a supply of Form No. 73650 identified as NC 5.

POLICY

1. Prime core contractors reporting errors on drawings and specifications, or requesting approval for changes in design or for the substitution of materials or requesting interpretation of drawings and specifications will prepare and submit Form NC 5, a double-printed ditto mat, in accordance with the instructions outlined herein. Copies of drawings, sketches, or other supplemental information for which approval action is requested will be attached to the form at the time it is forwarded for review and disposition.

ATTACHMENTS

1. Form NC 5 - Request for Engineering Changes.
2. Instructions for the preparation of Form NC 5 - Request for Engineering Changes.

PROCEDURES

1. Prime core contractors will prepare Form NC 5, Request for Engineering Changes, in accordance with instructions provided in Attachment 2. A separate form is to be accomplished for each action, and should be classified when required.
2. Three copies of all sketches, drawings and supplemental information on which action is requested and three reproduced copies of the completed NC 5, Request for Engineering Changes will be attached to the double-printed ditto mat and transmitted to Manager, Core Contractor Operations, Naval Core Department. One reproduced copy with attachments shall be transmitted to the Westinghouse Resident Supervisor.
3. One ditto mat and 3 reproduced copies indicating disposition action will be authenticated and returned to the originating contractor. This will be his authority for action in accordance with the disposition shown. Contractor shall forward one reproduced copy each to the Westinghouse Resident Supervisor and the Westinghouse Resident Quality Engineer.

TO: PURCHASING AGENT, NUCLEAR CORE DEPARTMENT
BETTIS ATOMIC POWER LABORATORY
WESTINGHOUSE ELECTRIC CORPORATION
P.O. BOX 1468, PITTSBURGH 30, PA.
ATTENTION: (1)

P.O. NO.

(2)

CORE TYPE AND IDENTITY

(3)

DATE

(5)

SERIAL NUMBER OF PART COVERED BY THIS REQ.

(6)

FROM:

(4)

DRAWING NO.

(7)

REVISION

(8)

PIECE NO.

(9)

DRAWING DATA OR SKETCH ATTACHED

YES ☐

NO ☐

(10)

SPECIFICATION NO.

(11)

REVISION

(12)

NAME OF PART

(13)

DESCRIPTION AND JUSTIFICATION FOR CHANGE REQUESTED

(14)

ORIGINATOR'S SIGNATURE

(15)

DATE

TITLE AND DEPARTMENT

(16)

SIGNATURE AND DATE

DISPOSITION

COMMENTS

BETTIS APL

(17)

APPROVAL

DISAPPROVAL

NAVY/AEC

(18)

APPROVAL

DISAPPROVAL

THIS FORM IS AN OFFICIAL DOCUMENT WHEN SIGNED BY THE PURCHASING AGENT AND NEED NOT BE FOLLOWED BY A CHANGE NOTICE TO THE PURCHASE ORDER.

AUTHORIZED BY:

(19)

PURCHASING AGENT

DATE

ATTACHMENT 2

INSTRUCTIONS FOR THE PREPARATION OF FORM NO. 73650 IDENTIFIED
AS NC 5 - REQUEST FOR ENGINEERING CHANGES

1. Although the form is pre-printed with the address of the Purchasing Agent, Nuclear Core Department, in order to expedite processing it shall be transmitted directly to:

Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Attention: Manager, Core Contractor Operations,
Naval Cores Department

Upon receipt at Bettis, a reproduced copy of Form NC 5 will be transmitted to PERO to verify receipt.

2. Self-explanatory.
3. Indicate both the general core type and the specific core identity, i.e.,
[REDACTED]
4. Contractor's name.
5. Date transmitted.
6. Enter the serial number of the part or parts covered by this request.
- 7-8-9. Drawing number, revision, and piece number taken from the applicable print.
10. Identify attachments.
- 11-12-13. Specification number, revision and part name taken from the applicable document.
14. Present a complete description of the request. Justification must include reasons for change and specifically state the effect of the change on price and delivery. If none, so state.
15. Signature of the contractor's authorized representative.
16. Title and department of the contractor's representative.
- 17-19. DO NOT WRITE IN THESE BLOCKS. They are intended for Westinghouse and Navy/AEC only.
20. Identify each Request for Engineering Changes by a prefix of the contractor's initials followed by sequential numbers.

May 17, 1962

INTRODUCTION - A large volume of the correspondence that is exchanged among Bettis and Prime Core Contractor involves recommendations for approval of subcontractors, process outlines, process or inspection specifications, welding procedures, repair procedures, and evaluation data submitted by prime core contractors.

Uniformity in handling such matters is desirable because it reduces errors and saves both time and material. In addition, considerable stenographic effort can be eliminated by all concerned through the use of a standard transmittal form. Accordingly, Attachment 1, Form NC 3 - Approval Request has been designed.

POLICY

1. Prime core contractor requests for approval of subcontractors, process outlines, process or inspection specifications, welding procedures, repair procedures, and evaluation data will be submitted on Form NC 3 - Approval Request in accordance with instructions outlined herein.
2. When subcontractors are submitted for approval the Form NC-3 must include the general specification, product specification, or any other contract specifications which will be applied to the subcontract and the status of subcontractor's qualification to these product or general specifications.
3. If the action which is submitted by this form for approval changes or violates in any manner an applicable contract requirement, the change must simultaneously be submitted to Westinghouse for approval on a Request for Engineering Change, Form NC 5. The Form NC 3, Approval Request, is not to be used for disposition of components which deviate from contract requirements.
4. All changes in approval documents must be specifically asterisked (*) on revision submittals. Approval of new revisions of submitted documents assumes that only the asterisked (*) items are changed. The approval action on a Form NC-3 is void if the documents contain changes which are not noted.
5. Westinghouse approval of contractor submitted documents does not relieve the contractor of the responsibility of meeting all requirements of the contract drawings and specifications

PROCEDURE

1. Prime core contractor will prepare Form NC 3 - Approval Request in accordance with the instructions provided in Attachment 2. A separate form is to be accomplished for each approval action requested for each core type and should be classified when required.
2. Three copies of the information on which approval action is requested and four reproduced copies of the filled out Approval Request will be attached to the NC 3 double ditto mat and transmitted to Manager, Core Contractor Operations, Naval Cores Department. One reproduced copy with attachments shall be transmitted to the Westinghouse Resident Supervisor.

3. After disposition by Westinghouse, indicated by the cognizant buyer's signature on the form, one mat and three reproduced copies will be returned to the originating contractor and will constitute his authority for action on the basis of the disposition shown. Contractor shall transmit one copy each to the Westinghouse Resident Supervisor and the Westinghouse Resident Quality Engineer.
4. Conditional approvals on NC Form 3's require a resubmittal to insure compliance with the conditions of approval. Work may be started on the components affected by the conditionally approved NC Form 3 immediately after the BRQE has been advised, in writing, that the core contractor agrees to comply with the stated conditions effective immediately, without exception. A new NC Form 3 must be submitted for disposition, which incorporates the comments of the conditional approval within two weeks after the conditional approval is received by the core contractor. Failure to do this will automatically cause the conditional approval to revert to disapproved.

☐ PROCESS OUTLINE ☐ INFORMATIONAL (1) ☐ REPAIR PROCEDURE ☐ WELDING PROCEDURE.
☐ PROCESS OR INSPECTION SPECIFICATION ☐ EVALUATION DATA ☐ SUBCONTRACTOR(S)

TO: PURCHASING AGENT, NUCLEAR CORE DEPARTMENT
 BETTIS ATOMIC POWER LABORATORY
 WESTINGHOUSE ELECTRIC CORPORATION (2)
 P.O. BOX 1468, PITTSBURGH 30, PA.
 ATTENTION:

P.O. NO.

(3)

CORE TYPE AND DESIGNATION

(4)

FROM:

(5)

DATE

(6)

SIGNED

(7)

DATE

TITLE

(8)

SUBJECT OF ATTACHMENTS:

(9)

REFERENCES:

(10)

COPIES OF ATTACHMENT(S) TO:

(11)

REMARKS:

(12)

SIGNATURE AND DATE	DISPOSITION	COMMENTS
BETTIS (13)	APPROVAL	(13)
	CONDITIONAL APPROVAL	
	DISAPPROVAL	

THIS FORM IS AN OFFICIAL DOCUMENT WHEN SIGNED BY THE PURCHASING AGENT AND NEED NOT BE FOLLOWED BY A CHANGE NOTICE TO THE PURCHASE ORDER.

AUTHORIZED BY:

(14)

PURCHASING AGENT

DATE

ATTACHMENT 2

**INSTRUCTIONS FOR THE PREPARATION OF FORM NO. 73649 IDENTIFIED
AS NC 3 - APPROVAL REQUEST**

A separate Form NC 3 is to be prepared as follows for each approval requested:

1. Check the appropriate block to indicate the nature of the matter covered by the approval requested.
2. Although the form shows the address of the Purchasing Agent, Nuclear Core Department, in order to expedite processing it shall be transmitted directly to:

Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Attention: Manager, Core Contractor Operations,
Naval Cores Department

3. Self-explanatory.
4. Show not only the general core type but also the specific core designation, e.g.,
[REDACTED]
5. Contractor's name.
6. Date transmitted.
7. Signature of contractor's authorized representative requesting the action and date.
8. Title of contractor's authorized representative.
NOTE: If the submittal requests disposition of a subcontractor's procedure(s), the name and title of the person who technically accepted the procedure for the core contractor should also be shown.
9. List title(s) of document(s) being transmitted including component(s) nomenclature when applicable.
10. List applicable references alphabetically and provide sufficient information to accurately identify them.
11. Indicate Westinghouse distribution of enclosures.
12. For use by originating contractor as required.
- 13-14. DO NOT WRITE IN THESE BLOCKS. THEY ARE INTENDED FOR BETTIS USE ONLY.
15. Identify each Approval Request by a prefix of the contractor's initials followed by sequential numbers.

TO: WESTINGHOUSE ELECTRIC CORPORATION
SECTION ATOMIC POWER LABORATORY
P.O. BOX 1400, PITTSBURGH, PA. 15200

R.O. NO.

73-Y-297800-MPT

ATTN: J. J. [unclear] PURCHASING AGENT

CONTRACT AND IDENTIFY

All Items

FROM: HEC Nuclear Products
P.O. Box 290
Attleboro, Mass.

DATE

July 29, 1964

DATE RECEIVED BY PART COVERED BY THIS REQ.

QUANTITY

REVISION

DESCRIPTION

REVISION DATE OF HISTORY ATTACHED

See below

SPECIFICATION NO.

REVISION

NAME OF PART

YES ☐ NO ☒

50, 53 & 54 Type Strands

DESCRIPTION AND JUSTIFICATION FOR CHANGE REQUESTED

Request that the required 2/16 ± .005" tolerance [redacted] subject strands be changed to 3/16 ± 1/64". Also that HEC be advised in assuming that [redacted]

REF. Nos: 913700 Rev. 10
913710 Rev. 10
913719 Rev. 10

RECEIVED BY
AUG 5 1964
D. J. DAVIDSON

Approval of this REQ will not affect contract price or delivery.

This REQ is not considered to be proprietary information and may be disseminated to other core contractors.

SIGNATURE AND DATE		DISPOSITION	COMMENTS
W. [unclear] 7-29-64		APPROVAL	XX
[unclear] 7/30/64		DISAPPROVAL	
[unclear] 7/30/64		APPROVAL	✓
[unclear] 7/30/64		DISAPPROVAL	

THIS FORM IS AN OFFICIAL DOCUMENT WHEN SIGNED BY THE PURCHASING AGENT AND MAY OR MAY NOT BE FOLLOWED BY A CHANGE NOTICE TO THE PURCHASE ORDER.

AUTHORIZED BY:

[Signature] 7/30/64

NO MGR:297800:576

TO: MANAGER, PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
UNITED STATES ATOMIC ENERGY COMMISSION
POST OFFICE BOX 1105
PITTSBURGH 30, PA.

CONTRACT NO.

AT(36-1)-104

CORE TYPE AND IDENTITY

ALL TYPES

ATTENTION:

FROM: Metals & Controls Inc.
P. O. Box 898
Attleboro, Massachusetts 02703

DATE OF INSPECTION

11/12/64

DRAWING, SKETCH OR DATA ATTACHED

YES ☒

NO ☐

DRAWING NO.

REVISION

PIECE NO.

SERIAL NO.

923J101

3

B-41

SPECIFICATION NO.

REVISION

NAME OF PART

WHAT CORRECTIVE ACTION HAS BEEN TAKEN TO PREVENT RECURRENCE OF ABOVE DEVIATION?

Probing of water channels now on sampling plan which will diminish longitudinal scratches. Operators have been re-instructed on the proper manner to deburr element ends. Cleaning procedures are being reviewed to prevent preferential pickle.

SIGNED:

O. Nietzel

11-16-64

TITLE

Sr. Process Engineer

ACTUAL ITEM CONDITION OR DIMENSION

The channels listed on the attachment deviate from the referenced standard as indicated.

LIMIT OR STANDARDS APPLIED

Std. B per ordering data
Std. 30

Visual and black cloth inspection show no evidence of white corrosion.

Any defect on the films not reported is acceptable to the standard.

F/R 69/71

SIGNATURE AND DATE

RECOMMENDATION FOR:

COMMENTS

APPROVAL

✓

DISAPPROVAL

DISPOSITION

APPROVAL

✓

DISAPPROVAL

PNROO

7.7. Manley
11/25/64

CENTRAL FILE COPY RECEIVED
DEC 3 1964

MCD

NO.

104:650

ENGINEERING NOTICE
FORM 73307 A

PAULKO

ACTION: Naval Core Planning and Control					N: 16040	
CODE		COMPONENT		S.C. NO. 450452		
QUANTITY See Below	DATE REQUIRED 11-2-62	S.S. SUPPLEMENT NO. 115067	ACCOUNTABLE GOV'T PROP.	ATTACHMENTS:		
CHECK APPLICABLE INSPECTION REQ'TS - IF ANY -		GOVERNMENT ☐	WESTINGHOUSE ☐	CHEM. & PHYSICAL ☐	CODE ☐	

DEFINE ACTION:

Please ship the following scrap [redacted] to
M&G Nuclear on P.O. #73-Y-299800 for use on the seal welding qualification
program:

[redacted] VH1-6 VE2-10
VE2-3 VE3-20
VE2-7

[redacted] attention: Mr. R. L. Churchill
M&G Nuclear, Inc.
Attleboro, Massachusetts

cc: H. B. Hunter
E. L. Juell
R. M. Matyas
F. G. Stengel
W. E. Zupen

J. TOMKO (3)

J.A. SPANGLER

J. J. MYER

L. DE MATTEO

INFORMATION CATEGORY Unclassified	AUTHORIZED CLASSIFIED B Hunter	DATE 10/29/62	INITIATED BY J. C. Halbing	DATE 10-29-62	SERVICE NCR-Fin
COST AND DELIVERY INFORMATION:			APPROVED B Hunter 10/29/62		
REASON FOR REJECTION			APPROVED M. J. J. 10/29/62		
			APPROVED		



Westinghouse

BETTIS ATOMIC POWER LABORATORY
Naval Cores

Date January 8, 1963

From Bettis Atomic Power Laboratory

Mr. J. A. Spangler, Buyer
Procurement - Core Contracts

Subject P-25, Handling Guides

cc - Mr. R. F. Gessner
Mr. F. W. Hassett
Mr. H. B. Hunter
Mr. R. M. Matyas
Mr. L. B. Prue

Ref. (a): WAPD-NAC-PA-2425 dated
December 4, 1962
(b): Metals and Controls (M&C)
letter, File No. WAPD-4303

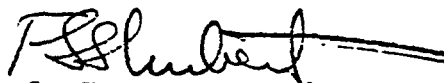
The following comments are written in response to your request in your letter, reference (a), concerning the subject procurement action.

Naval Cores Engineering has no comment on Items 1, 3, 5, 6 and 7 in the M&C letter, reference (b).

In Item 2, M&C recommended a design change in the inner container. For their information, we may state that KAPL is currently engaged in the procurement of a drawn seamless can of the type recommended.

In Item 4, M&C described a vacuum table with no specific mention of protective sides and top. If these are not present, [REDACTED]

In the final sentence of their opening paragraph, M&C stated that since "..... the specifications covered by P-25 are "Reference Specs", we presume they need not be followed completely". Without quibbling about semantics, we would point out the guides were written as outlines of safe, reasonable conditions and practices, and deviations from the guides should not be made without careful, searching analysis of possible consequences of the deviations.


F. L. Shubert, Supervisor
Materials and Specifications
Naval Cores Engineering

HQJohannessen/le



Westinghouse WAPD-NAC-PA-2485

Date December 27, 1962

From BAPL - SMR Building

Subject

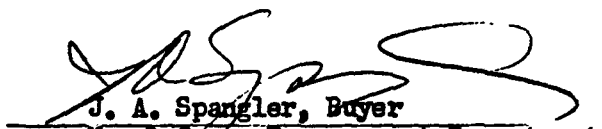
BETTIS ATOMIC POWER LABORATORY
G Building

Mr. F. L. Shubert
NAC Engineering

cc: R. M. Matyas
A. Cavalcante, Jr.

You are reminded of my previous queries concerning Metals and Controls' bid on proposed change P-25 for incorporation of WAPD-NAC(E)-1107 and 1123.

Please reply by January 4, 1963. A copy of PA-2425 is attached.


J. A. Spangler, Buyer
Naval Stores Procurement Department

JAS/jc

Attachment: WAPD-NAC-PA-2425



WAPD-NAC-PA-2425

From BAPL - SMR Building

Date December 4, 1962

Subject P-25, Handling Guides

BETTS ATOMIC POWER LABORATORY
G Building

Mr. F. L. Shubert

Per our telecon of 12/1/62, attached is a copy of Metals and Control's quote on P-25 for the incorporation of WAPD-NAC(E)-1107 and 1123. Please evaluate the M & C comments and reply as soon as possible.

Handwritten: 7-3
JAS/jc

Attachment

Handwritten signature
J. A. Spangler, Buyer
Naval Cores Procurement Department

*from
I think this
could also apply to
out P-25.*



BETTIS ATOMIC POWER LABORATORY
Bettis Site

WAPD-NAC(CC)-598

From Bettis Atomic Power Laboratory

Date December 3, 1962

Subject

Proposed Change P-61

Mr. A. Cavalcante, Supervisor
Naval Cores Procurement Department

cc: Mr. F. W. Hassett
Mr. T. J. Hasley
Mr. G. G. Ritter
Mr. A. Sabol
Mr. K. W. Schwanekamp

In telecon of 11/28/62, Mr. A. Sabol indicated that NR technical approval to incorporate WAPD-NAC(E)-1107 dated 7/26/62, and WAPD-NAC(E)-1123 dated 9/11/62 into P.O. 73-Y-297900-MPT, Attachment 4, Part V, would not be required.

You are also reminded that Mr. Sabol wishes to approve any change notice incorporating the above documents if any cost, no matter how small, is involved.

L. J. Irvine

L. J. Irvine
Core Contractor Operations
Naval Cores Department

/cy

DEC - 3 1962

A CORPORATE DIVISION OF TEXAS INSTRUMENTS INCORPORATED

File: WAPD-203
November 14, 1962

Mr. J. A. Spangler
Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 1468
Pittsburgh 30, Pennsylvania

Subject: Proposed Change P-25 to P.O. 73-Y-297800-MPT

Dear Sir:

We have reviewed the subject proposed change and are pleased to advise that we will accept a change notice incorporating it into the order for no change in price or delivery, provided the assumptions and exceptions listed below are acceptable to you. Since the specifications covered by P-25 are "Reference Specs," we presume they need not be followed completely.

1. Water sprinklers will not be used [REDACTED]
[REDACTED] In case of fire in this area, all personnel will be evacuated and will not fight the fire from within the area.
2. Normally we will store [REDACTED] containers in which they are supplied. We will not provide our own containers. The containers now being supplied are of different design than those shown in the referenced specifications. We recommend the reference design be changed to require a drawn seamless can for the inner container. A simple tin coated can is now being used as a substitute for the inner poly bottle that is temporarily the supplied container.
3. [REDACTED]
4. [REDACTED]
resting on the perforated top of a vacuum table equipped with a filter. The referenced guides recommend a hood; but we believe our method to be superior.

November 14, 1962

5. We assume you waive the requirement for a 130 feet minimum separation [REDACTED] building and the nearest inhabited building. Our storage is approximately 35 feet from any building and is constructed of reinforced concrete, covered with a minimum of 2 feet of gravel and having its entrance facing away from the nearest inhabited building. We plan no changes in our existing storage facility.

6. [REDACTED]

7. [REDACTED]

If you wish to incorporate WAPD-NAC(E)-1107 and 1123, please transmit an appropriate change notice by return mail.

Sincerely yours,

R. L. Churchill

R. L. Churchill
Contract Administrator
Navy Nuclear Products

RLC/bs



Washington Field Office

WAFD-NAC-PL-2203

Naval Air Station, Norfolk, Virginia

Box 1462, Norfolk, Virginia

October 22, 1962

Metals & Controls, Inc.
P. O. Box 890
Attleboro, Massachusetts

Attention: Mr. E. L. Churchill
Contract Administrator

Subject: Purchase Order 73-X-297820-WPF
Proposed Change 25

Dear Sir:

Please quote the following reference document changes:

1. Change "Interim Guide, Safe Handling [redacted] dated 10/30/61 to "Guide for the Safe Handling [redacted] dated 7/26/62.
2. Change "Interim Guide (Supplement), Safe Handling [redacted] dated 12/17/61 to "Guide for Safe Handling [redacted] dated 9/11/62.

The new guides were hand carried to your plant on October 5, 1962, by Mr. B. Davidson.

Please quote by October 25.

Very truly yours,

A. Cavalcante, Jr., Supervisor
Naval Core Procurement Department

By

J. A. Spanglow, Buyer

cc:

Mr. F. A. Embert
Mr. E. L. Decker
Mr. E. L. Friel, Jr.
Mr. A. Cavalcante, Jr.

REQ.

73 -Y-297800-MPT

TO: NAVAL CORES PROCUREMENT DEPARTMENT

PAGE 1 OF 1 PAGES

THE SPACES ABOVE AND TO RIGHT OF BOLD LINES TO BE FILLED IN BY PROCESSING SECTION ONLY				SCREEN FOR EXCESS ☐ YES ☐ NO	
SUPPLIER'S NAME <i>Metals and Controls Inc</i>				DMS RATING DO- E2	
SUPPLIER'S ADDRESS				CASH TERMS COMMODITY CODE FLC	
CONFIRMING WIRE ☐ VERBAL ☐ LETTER ☐		TO	DATE	TO BE TYPED: ☐ P. O. ☒ P. O. I. R. #4 ☐ P. O. C/N ☐ WORK REQUEST ☐ INTERWORKS REQ'N	
F. O. B.	TRANSP. CHARGES	COORDINATOR		ATTACHMENTS: ☐ DRAWINGS ☐ SPECIFICATIONS ☐ TERMS AND CONDITIONS ☐ INSP. REQMTS.	
SHIPPING DATE	SHIP VIA	BUYER		EXEMPT FROM SUBJECT TO FEDERAL EXCISE TAX	

THE SPACES BELOW TO BE FILLED IN BY ENGINEER			UNIT PRICE	TOTAL PRICE
MIL SPEC. Q-9858 REQUIRED ☐ YES ☐ NO			ENGINEER'S C/N NO. 14	
ITEM	QUANTITY	DESCRIPTION		
		RE: P.O. Attachment #14 Part V. Please incorporate the following changes:		
1.		Change "Interim Guide, Safe Handling [REDACTED] dated 10/20/61 to "Guide for the Safe Handling of [REDACTED] dated 7/26/62.		
2.		Change "Interim Guide (Supplement), Safe Handling [REDACTED] dated 12/15/61 to "Guide for Safe Handling [REDACTED] dated 9/11/62.		
			TOTAL PRICE	

COST ESTIMATE - 0 -		TOTAL WEIGHT --	LAST REQ'N NO. --	BSTR USE ONLY GOVERNMENT INSPECTION REQUIRED AT PLACE OF MFG. ☐ NAVY INSPECTION - PLACE OF MFG. ☐ DESTINATION ☐ NAVEXOS P1034, "MANUAL FOR SOURCE INSPECTION AND ADMINISTRATION OF PROCUREMENT" APPLIES TO THIS ORDER. NO NAVY GOVERNMENT INSPECTION ☒ SUGGESTED VENDORS <i>Raytheon</i>
DATE REQUIRED --	C/N COST CEILING --	P. O. COST CEILING --		
DELIVER TO		S. O. NO. --		
		CHARGE --		
END USE [REDACTED]				CHEMICAL TEST ☐ PHYSICAL TEST ☐ CODE INSPECTION ☐ INITIAL
ORIGINATED BY E. L. Juell		AEC OR NAVY CONTRACT AT-11-1-GEN-14		(W) INSPECTION - SOURCE ☐ DESTINATION ☐ NOT REQ'D ☒ 8.3
DATE 10/12/62		DEPT. NAC(CC)		APPROVED: <i>Rumay</i> DATE: 10/12/62

0

BETTISATMPGH

METALS AND CONTROLS 25 617-222-1259 1/7/63 420 PMEST

A CAVALCANTE WESTINGHOUSE BETTIS PLANT PITTSBURG

CONFIRMING VARIOUS DISCUSSIONS BETWEEN PRUS AND HEEKE OF BAPL AND DXX
DAVIDSON AND HOWLAND OF M AND C. M AND C PROPOSES TO CONDUCT [REDACTED]
[REDACTED] PROGRAM AND DEVELOP THIS TECHNIQUE IN
ADDITION TO PRESENT MANUAL METHODS ALLREADY DEVELOPED AND IN USE.
PROGRAM WILL BE AS OUTLINED IN V KING REPORT DATED 12-28-62. WE OFFER
TO DO THIS ADDITIONAL WORK AT NO CHANGE IN CONTRACT PRICE. AN
ADDITIONAL 1.0 KG OF NORMAL URANIUM MATERIAL WILL BE REQUIRED WHICH
YOU ARE REQUESTED TO SUPPLY AT NO CHARGE TO M AND C. BETTIS AND THE
PROGRAM STANDS TO GAIN AN ALTERNATE AND PROBABLY SUPERIOR [REDACTED]
[REDACTED] FROM THIS APPROACH. MATERIAL IS URGENTLY NEEDED
TO SUPPORT PROGRAM SCHEDULE. CAN YOU SHIP NO LATER THAN 1-9-63

G P HOWLAND MGR
NAVY NUCLEAR PRODUCTS
END NANCY

N5 - fuel develop

April 25, 1963

TWX TO:

United Nuclear Corporation
Fuels Division
365 Winchester Avenue
New Haven 4, Connecticut

United Nuclear Corporation
Montville, Connecticut

Attention: Mr. G. Walsh

Attention: Mr. V. Prato

Reference: (1) BAPL Purchase Order 73-Y-307094-M
(2) BAPL TWX J. R. Mayer dated 4/22/63

In accordance with Reference (2), ship [REDACTED] to Metals and Controls, Nuclear Division, Attleboro, Massachusetts; Attention: Mr. R. Churchill via truck collect. Mark each box for use on Westinghouse Purchase Order 73-Y-297800-MPT.

117 pieces [REDACTED]
400 pieces [REDACTED]

Please have shipment enroute to Metals and Controls by 4/26/63.

R. J. Turner

Naval Cores Procurement

641

cc: J. R. Mayer
M. J. Carroll
W. Lehtonen

CORE CONTRACTOR
DEVIATION NOTICE - DISPOSITION REQUEST
FORM NRR 6-8/59 REV. 1

(This Form to be completed by Typewriter)

NO. _____

TO: MANAGER, PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
UNITED STATES ATOMIC ENERGY COMMISSION
POST OFFICE BOX 1105
PITTSBURGH 30, PA.

CONTRACT NO.
AT(36-1)-104
CORE TYPE AND IDENTITY

ATTENTION:

All Items

FROM: M & C Nuclear Products
P. O. Box 898
Attleboro, Mass.

DATE OF INSPECTION
January 3, 1963
DRAWING, SKETCH OR DATA ATTACHED
YES ☐ NO ☒

DRAWING NO. 1-5840	REVISION C	PIECE NO. 94 PCS.	SERIAL NO. Ingot 70234
SPECIFICATION NO. MIL-Z-19859	REVISION B - 2-1-62	NAME OF PART [REDACTED]	

WHAT CORRECTIVE ACTION HAS BEEN TAKEN TO PREVENT RECURRENCE OF ABOVE DEVIATION?

Production control to supervise & instruct on re-marking.

SIGNED:

R. J. Gennone / *R. J. Gennone*

TITLE
Sr. Metallurgist

ACTUAL ITEM CONDITION OR DIMENSION

94 pcs from ingot 70234 from top & top middle.
transferred in full when re-numbered at M & C.

LIMIT OR STANDARDS APPLIED

MIL-Z-19859-B
M & C standard procedure for marking.

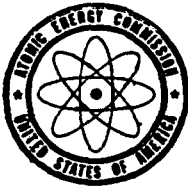
Ingot numbers were maintained.

Material certified to MIL-Z-19859-B.

F/R:1/25

SIGNATURE AND DATE	RECOMMENDATION FOR:	COMMENTS
<i>Bettis APL</i> <i>3/1/63</i>	APPROVAL ☒	
	DISAPPROVAL ☐	
<i>7.7. Manley</i> <i>1/11/63</i>	DISPOSITION	
	APPROVAL ☒	
	DISAPPROVAL ☐	

NO. MCD:104:11



IN REPLY REFER TO:

CMD:5980:5

UNITED STATES
ATOMIC ENERGY COMMISSION
PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
P. O. Box 1105
PITTSBURGH 30, PENNSYLVANIA

RECEIVED BY G. P. HOWLAND

AUG 20 1962

August 17, 1962

George P. Howland
Metals and Controls, Inc.
Post Office Box 898
Attleboro, Massachusetts

Subject: CONTRACT AT(36-1)-104 - [REDACTED]
Release

Dear Mr. Howland:

Based on approval of PNR-3 Form MC:104:31, "Process Outline For [REDACTED] dated August 2, 1962, Metals and Controls is hereby given a [REDACTED] to be used on subject contract.

This release does not relieve the contractor of the responsibility to supply a quality product meeting the requirements of the contract.

Very truly yours,

Harold H. Hoffman
Harold H. Hoffman, Director
Core Manufacturing Division

CC: Resident Government Inspector

8/20 distribution
S. E. Donaldson
D. J. Davidson
P. K. Moffat / S. Clark
M. Perrin / R. Clegg
W. Stevenson

PNR-18

INSTRUMENTS & CONTROLS INC.
P. O. BOX 898 • ATTLEBORO, MASS.
A CORPORATE DIVISION OF
TEXAS INSTRUMENTS
INCORPORATED

File

SALES ORDER NO.:
N-01670
SALES ORDER DATE

NUCLEAR PRODUCTS CASTLE 2-3500

PAGE 1 OF 2 PAGES

CUSTOMER ORDER Contract AT(36-1)-104	CODE PNRO-18	ADMINISTRATOR G. P. Howland	SUPPLEMENT NO. 18-6	DATE 11/14/62
---	-----------------	--------------------------------	------------------------	------------------

SALES ORDER SUPPLEMENT

INITIATED BY J. White <i>J. White</i>	DISTRIBUTION - FOR ACTION	
AUTHORITY PNRO Letter Dated 11/7/62 R. J. McCormick to G. P. Howland Transmitting Change Notice No. 6	☒ OPNS PLANNING	☐ R&D
	☒ QUALITY CONTROL	☐ PROJECT OFFICE _____
	☐ FINANCE	☐

INSTRUCTIONS

This supplement provides for [REDACTED] in recycle form supplied by the Commission for this contract. The contract is hereby amended as follows:

- The Commission will supply to the Contractor, F.O.B. Contractor's Plant, at no cost to the Contractor, [REDACTED] and suitable for recycle [REDACTED] under subject contract.
- The Contractor may inspect the material upon receipt as to suitability of shape and form; material which the Contractor determines unsuitable for recycle because of shape or form will be properly packaged and shipped to the Commission's Oak Ridge, Tennessee, facilities at no cost to the Government, and Contractor will not be charged [REDACTED] as input under the contract.
- Should sufficient material be rejected upon receipt inspection, in accordance with the provisions set forth in subparagraph b., above, with the result that fewer than five 500 pound batches [REDACTED] an equitable adjustment will be made to the price increase set forth hereinafter in subparagraph d., below.
- The contract has been increased in consideration for the additional work required of Contractor in the preparation of scrap and [REDACTED] acceptability for use under the contract. Should any quantity of the material be determined unusable on the basis of such analyses, Contractor will not be charged [REDACTED] as input under the contract, no price adjustment to the price increase provided herein will result from such rejection, and such rejected material will be properly packaged and shipped to the Commission's Oak Ridge, Tennessee, facilities, such shipment being at Government expense.

(continued)

ACTION TAKEN (ACTION ADDRESSEE COMPLETE AND RETURN TO THE INITIATOR)

*550 mac lot size x 5 = 2750[±]
The figures are in the A but if we get more we need more, B.
Sid: This is OK. We'll be receiving only about 2200[±]
D.C.*

SIGNATURE

DATE

DEPT

Sales Order No.: N-01670
Administrator: G. P. Howland

S.O.S. 18-6

Page 2
11/14/62

This material was obtained by the Commission from Cheswick. Since all records are not available, we must perform a complete certification.

As a result of the acceptance of this change notice, the following bogies will apply:

 analysis 5 lots plus one control	\$1,050
Impurity analysis 5 lots	\$3,750
Manufacturing	90 hours

PAGE 1 OF 1		NO. 581-02-03
SUBJECT HEALTH-PHYSICS PROCEDURE DEFINITION OF TERMS		DATE May 1, 1961 SUPERSEDES 581-02-02
PREPARED BY P. Duff	DEPARTMENT(S) AFFECTED All	APPROVED AUTHORIZED  G. L. Williams

I. Definitions given in 10 CFR 20, Revised, will apply throughout this Manual.

II. In addition, the following definitions are used in the Manual:

CLEAN AREA - Restricted area in which bare or unclad radioactive material is not handled. Clad or protected radioactive material may be handled in clean areas.

CONTAMINATED AREA - Restricted area in which bare or unclad radioactive material is handled.

CONTAMINATION - The unwanted deposition of radioactive material on surfaces, and radioactive aerosols.

DAUGHTER PRODUCTS - Isotopes produced by decay of radioactive materials.

EXTREMITIES - Hands, forearms, feet, and ankles.

FISSILE - Materials which will fission with thermal neutrons.

FISSIONABLE - Materials which will fission only with neutrons having energies higher than 1 Mev.

FUEL MANUFACTURING AREA (FMA) - That part of the plant, segregated from all other parts of the plant, where unclad nuclear fuel is handled.

NUCLEAR SAFETY - Prevention of accidental self sustaining reactions in fissile material.

SHALL - Indicates mandatory compliance.

SMIDGEN - One millemicrogram - 10^{-9} grams.

URANIUM, ENRICHED - Uranium enhanced in its fissile isotope U-235.

URANIUM, NATURAL OR NORMAL - Uranium containing the normally occurring ratio of isotopes.

URANIUM, DEPLETED - Uranium depleted in its fissile isotope U-235.

WILL - Indicates mere future occurrences.



METALS & CONTROLS INC.
A CORPORATE DIVISION OF
TEXAS INSTRUMENTS
INCORPORATED

FILE: WAPD-203

18 February 1966

Mr. V. W. Lehtonen
Westinghouse Electric Corporation
Bettis Atomic Power Laboratory
P. O. Box 79
West Mifflin, Pennsylvania 15122

SUBJECT: P. O. 73-Y-297800-MPT - Retention Payments

Dear Mr. Lehtonen:

In response to your letter of January 28, 1966 on the same subject, M&C is pleased to offer the following information with regard to the outstanding items noted:

1. Spares

- A. Item D will be certified two weeks after receipt of disposition of MCD: 297800-1879.
- B. A proposal identified as MCP-82 was transmitted on 4 February with regard to shortage items. Item BP, Support Nut, will be supplied as required by the order and was not included in MCP-82; certification will be forwarded with that for Item D.
- C. Shipping documents for Items V and AX are attached, showing destination, carrier and way bill number for the subject items.

M&C cannot find the record of shipment for (1) Spring Seat, Item W. This was shipped to the attention of J. A. Spangler in March or April, 1965, for use in the leadscrew redesign and evaluation program at Bettis. We request your aid in canvassing the Westinghouse technical personnel involved in this program in order to locate the unit.

- D. Items BT and BU exist apart from those contained in Item D. However, these were installed and pinned into the A2 upper module assembly shipped to BAPL and recently returned to M&C; they cannot be removed in condition to meet the drawing requirements. We await Westinghouse's direction regarding removal of these items from the module.

FEB 21 1966

2/18/66

E. M&C notified Westinghouse on January 27, 1966 that the spare peripheral seal bar would be shipped on February 15. However, our vendor has experienced difficulty in obtaining clearance for their x-ray subcontractor and the piece is not yet complete. M&C will notify you of the details of this clearance application as soon as they are available, and we request your aid in expediting this approval.

2. Residual Westinghouse Furnished Property

M&C is reviewing the quantities of inconel supplied under the order, as well as the residual components and equipment supplied, and will transmit this accounting by March 15, 1966.

3. Defective Overage Items

M&C has enclosed a copy of Grunwald Plating Co. shipping order dated 4/28/65 indicating that several bolts, including Nos. 75 and 76 were returned to M&C as received by Grunwald. Also enclosed is a copy of M&C Rejection Notice No. 12990 dated 5/4/65 which notes several defective conditions, including plating defects on bolts Nos. B-1 and B-25.

These four bolts, 75, 76, B-1 and B-25 are the four defective ones in question and, as shown by the attachments, were defective when received from Grunwald for the second time. The [REDACTED] are acceptable and available for use per your disposition.

4. Pending Claim

Since M&C has recently received proposed change P-360 which greatly revises the scope of work on the test head, it appears that M&C will complete welding on the test head sooner than originally anticipated, if the change is incorporated. Therefore, if all Westinghouse obligations and delivery dates are met enabling M&C to complete all welding by June 8, 1966 it appears that the need for retaining welding personnel will cease at that point. Consequently, M&C will consider withdrawing our pending claim for costs incurred up to June 6, resulting from late delivery of the test head adaptor flange, in exchange for receipt of the total retention amount currently withheld, \$170,794, within the next two weeks.

5. P-330: [REDACTED]

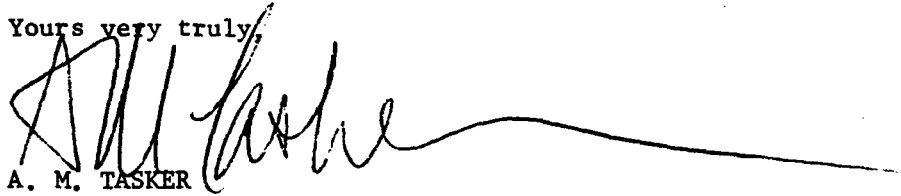
M&C is awaiting the results of Mr. Duker's efforts to obtain a solution which will not unduly penalize M&C for having assumed the risk [REDACTED]

6. P-356 - Elements to Westinghouse

M&C's proposal was mailed on January 26, 1966. Since our profit for this order is nearly non-existent and since the fact that we have excess elements available for you indicates that we have no unexpended labor, there is adequate justification for charging Westinghouse for these elements. However, since Westinghouse would be required to procure these at full price from any other vendor, M&C is granting a substantial savings by offering them to you at half price.

I trust the information and resolutions contained herein will eliminate any remaining barrier and permit prompt payment of the retention amounts.

Yours very truly,

A handwritten signature in dark ink, appearing to read 'A. M. Tasker', followed by a long horizontal flourish line extending to the right.

A. M. TASKER
Contract Administrator
Navy Nuclear Products

1c

PAGE 1 OF 5	NO. 589-40-06
----------------	------------------

SUBJECT HEALTH-PHYSICS		DATE March 22, 1962	
PROCEDURE NUCLEAR SAFETY		SUPERSEDES 589-40-05	
PREPARED BY P. Duff	DEPARTMENT(S) AFFECTED All	APPROVED <i>P. Duff</i>	AUTHORIZED <i>G. L. Williams</i> G. L. Williams Product Group Manager

I. PURPOSE

This procedure outlines the philosophies and methods for maintaining nuclear safety. It includes material batch sizing and handling, storage, receiving, issuing, scrap handling, and shipments.

II. PHILOSOPHY

- A. The nuclear safety program at Metals and Controls has been developed to create the highest possible degree of assurance that nuclear reactions will not occur in the various operations performed in the fabrication of nuclear fuel. As in other fields of safety, nuclear safety considerations must be seriously treated, but weighed and applied with proper perspective so as not to be out of proportion to the risks involved.
- B. Data and techniques from which criticality parameters for variable production operations can be calculated are not sufficiently accurate to permit their use in determining safe and conservative, yet realistic parameters. Therefore, for production operations, only results and cautious extrapolations of critical experimental data may be used to provide the basic parameters. Appended to this section is an abridged bibliography of reports on hand containing this data. From time to time, additional data may be obtained from other reports and discussions with AEC contractor and licensee nuclear safety specialists.
- C. Design Criteria
 1. Ordinary water is considered the most significant moderator or reflector available, although graphite and uranium in thicknesses of more than six inches are also quite effective.
 2. The possibility of flooding is assumed unless otherwise provided for. Exceptions are all high temperature furnaces, the enriched and clean vaults, and watertight storage containers.
 3. Interaction is considered to be a function of solid angle, except when units are totally water reflected.
 4. Dry uranium of less than 5% enrichment is not considered capable of sustaining a chain reaction. Natural and depleted uranium, and thorium are considered incapable of sustaining a chain reaction under any conditions. Unless otherwise stated, all enriched uranium is 93 w/o U-235.
 5. Nuclear poisons are not normally used as primary means of providing nuclear safety, but are considered as additional safety factors when they are

present. When used as a primary nuclear safety device, they shall be incorporated in such a manner as to prevent loss or removal which could render the system unsafe.

6. The possibilities of sabotage or intentionally creating a chain reaction are not considered factors in establishing nuclear safety criteria.
7. The preferred parameters for nuclear safety control are, in order of preference: mass, concentration, geometry, poison.
8. For a system to be considered safe, at least two independent contingencies occurring simultaneously must not result in a situation where criticality may occur.

III. CONTROL SYSTEMS

A. The basis of the nuclear safety program shall be batch size control. The maximum safe quantities (MSQ) shall be established in the following ways:

1. The Health-Physicist shall, after a detailed study of the parameters involved, determine the maximum safe quantities for each phase of each job involving fissile material. Appendix F(L) of this procedure enumerates standardized MSQs.
2. Maximum safe quantities for each operation shall be indicated in the spaces provided on Manufacturing Process Sheets or Route Cards. Process Engineering, when preparing these instructions, shall have the master copies initialed by the Health Physicist. All persons handling nuclear fuel shall observe this maximum safe quantity, and never exceed it.
3. Engineers preparing short, single use working instructions on three-part forms shall communicate with the Health-Physicist in person, in writing, or by telephone, giving job parameters, and requesting a maximum safe quantity determination. This quantity, together with a description of the material, shall be included in the working instructions. The Health-Physicist shall either initial the working instructions or shall communicate consent in writing to the engineer. Engineers receiving maximum safe quantity information by telephone may utilize the working instructions prior to receipt of the written maximum safe quantity consent.
4. All unique or questionable nuclear safety determinations by the Health-Physicist shall be submitted to members of the Applied Physics group for audit. These individuals are both technically competent to review such calculations, and are not directly interested in either Production or Health-Physics. After reviewing nuclear safety calculations, the Applied Physics man shall signify concurrence by signing the Nuclear Safety Analysis Sheet. All members of Applied Physics who participate in calculations shall also conduct a nuclear safety inspection in all areas of the shop, once a year.
5. Changes involving nuclear safety parameters in processes, equipment, etc., or other details which involve reconsideration of the nuclear safety factors applied, shall be submitted for consideration by the Health-Physicist prior to beginning the change.

B. Each batch of one maximum safe quantity or less, as specified on the Manufacturing Process Sheet or Route Card, shall be separated by at least

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18 inches edge-to-edge from every other batch, unless otherwise specifically designated by the Health-Physicist.

- C. Fissile materials shall be transferred from one work center to another only on special nuclear-safe "criticality" carts.
- D. The work center supervisor is responsible for receipt, location, movement, storage, processing, and transfer of all fissile material in his work center.
- E. In-process storage racks, meeting the spacing requirements of Tables V and VI of LA-2063, may be used for the storage of maximum safe quantity batches described on the Manufacturing Process Sheets or Route Cards. Each such rack must be approved by the Health-Physicist for dimensions, location, rigidity, proximity to other racks, and general soundness of design.
- F. Vault custodians shall issue fissile materials only within the limits specified on the Manufacturing Process Sheet, Route Card, or engineer-issued working instructions. Any production worker, engineer, inspector, or other person with properly filled in Sheet, Card, or instruction may draw fissile material from the vaults.
- G. All employees shall be thoroughly educated in nuclear safety by the Health-Physicist.
 - 1. Each new employee shall be given a brief primer, including a careful enumeration of the basic safety rules, on his first day at work. He shall receive further, more rigorous instruction in nuclear safety after approximately one month's employment, if he comes in contact with fissile material in any way. Secretaries, etc., who have no contact with fissile shall not be given this further instruction.
 - 2. Employees constantly handling fissile material shall participate in discussions concerning nuclear safety and health-physics at least twice a year.
 - 3. All obtainable educational material on nuclear safety shall be distributed to the appropriate groups as soon as it becomes available.
- H. Vault Storage
 - 1. All fissile material not being worked on, inspected, or otherwise used, shall be stored in the vaults.
 - 2. Vaults shall be provided with racks of sufficient strength and integrity to support the heavy loads of fuel throughout all foreseeable circumstances. Racks shall be provided with spacers to maintain at least twelve inch separation between each batch stored there. In the main vaults, the separation shall be six inches. The strength and integrity of each rack, and the adequacy of all spacers must be approved by the Health-Physicist prior to their use.
 - 3. Maximum safe quantities for vault storage shall be determined as follows:
 - a. The same as that on Manufacturing Process Sheets, Route Cards, or engineer-issued working instructions.

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- b. One foil-grade ingot.
 - c. Six kilograms of chop-stock [REDACTED]
 - d. As specified in writing by the Health-Physicist.
4. Access to the main vaults shall be as limited as possible. No production worker, engineer, or inspector may draw material out except under the direct supervision of a vault custodian.
- I. Incoming fissile material shall remain in the container it was shipped in, until accepted by vault personnel. Maximum safe quantities shall be the same as for vault storage.
- J. The handling of fissile scrap is covered completely in Standard Operating Procedure 583-40-03.
- K. Shipments
- 1. All shipments of fissile material shall be made only with the cognizance and concurrence of Accountability, Health-Physics, and Shipping.
 - 2. Shipments of fissile material which may be sent parcel post need have no special nuclear safety considerations.
 - 3. The maximum safe quantities for standard shipments are appended to this procedure. Non-standard shipments shall be analyzed by the Health-Physicist, and submitted to the AEC, Division of Licensing and Regulation, or Schenectady Naval Reactors Office, for approval.

IV. RESPONSIBILITIES

- A. The Health-Physicist is responsible for establishing parameters for each configuration of fissile material, communicating this data to Process Engineering, engineers, vault custodians, shipping, and others, and to audit production vaults, inspection, etc., to insure compliance with all conditions of this procedure.
- B. Applied Physics shall audit nuclear safety determinations when requested to do so by the Health Physicist, and shall audit the condition of the total nuclear safety program once a year.
- C. Process Engineers, Q.C. Engineers, and any others who wish to make any changes which might affect established nuclear safety conditions, shall obtain the approval of the Health Physicist before making the change.
- D. Management, including managers, foremen, and supervisors, are responsible for the adherence by the people within their jurisdiction to all the conditions of this procedure.
- E. Each employee is responsible for the strict observance of all conditions of this procedure.

V. APPENDICES

- A. Bibliography of information on hand - abridged

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1. TID-7016 (LA-2063); Nuclear Safety Guide
 2. TID-7019; Guide to Shipment of Enriched Uranium Materials
 3. K-1019; Basic Critical Mass Information and Its Application to ORGDP Design and Operation
 4. K-1380 and Classified Supplements; Studies in Nuclear Safety
 5. LA-1958; Critical Masses of Fissionable Metals as Basic Nuclear Safety Data
 6. LA-2026; Critical Masses of Oralloid Lattices Immersed in Water
 7. AECD-4056; Methods of Determining Solid Angles
 8. AECD-4083; Practical Reactor Theory
- B. Shipping parameters - all alloys, all enrichments

<u>Configuration</u>	<u>MSQ</u>	<u>Shipping Container Drawing No.</u>
1. Solid, massive pieces (greater than 2 kg. U-235 per piece), dry	10 kg.	4-4002A
2. Small pieces (e.g., chop stock, foil), dry long pieces XXXXXXXXXX dry	5 kg.	4-4002A 4-40030 4-40050 4-4006A
3. Scrap (chips, turnings, pieces, etc.) wet (see SOP 583-40-03, Waste Management)	2 kg.	2-4000A
4. MTR type fuel elements, dry	1.8 kg.	8-4012A 8-4014A

4/4/62

HEALTH & SAFETY MANUAL - APPENDIX F(L) - NUCLEAR SAFETY PARAMETERS

Material	Configuration		Critical Mass	Maximum Safe Quantity	Reference(s)	Comments
		Size				
Ingots		[REDACTED]	Infinite	11 kg	TID-7016, Rev. 1 - Fig. 4	1,2,3
Chop Stock		< 4" Diameter Cylinder	28 kg	11 kg	LA-1623 - Fig. 6.2	1,2
		1/8" Cubes	5 kg	2.3 kg	LA-1958 - Fig. 6	1,2,4
		1/4" Cubes	7.5 kg	3.3 kg		
		3/8" Cubes	9.5 kg	4.3 kg		
		1/2" Cube	11.5 kg	5.5 kg		
Foil		.020" < Thickness		4.0 kg	LA-2026	1,2,5,6,7,8
		.010" < Thickness < .020"		2.0 kg	Y-A2-79	
		.003" < Thickness < .010"		1.0 kg	Y-A2-98	
		Thickness < .003"		0.35 kg		
[REDACTED]			[REDACTED]			
Subassemblies & Assemblies		3" x 3" Nominal X-Section	2.6 kg	1.2 kg	A. D. Callihan	1,2,11,13,14

FOOTNOTES:

1. Flooding with water and double batching will not produce criticality.
2. Any alloy, any enrichment.
3. Always safe geometry, except with thick (greater than 12") graphite or uranium reflectors.
4. Nominal shapes and dimensions.
5. 6" wide by rolled length, or smaller.
6. On 10" diameter reels, up to 1/2" thickness of foil of any gauge may be coiled; largest maximum safe quantity listed represents much less than 1/2". Steel wire or masking tape shall be used to prevent foil from uncoiling. Temporary storage outside the vaults, and intraplant transportation shall be in watertight stainless steel containers.
7. Y-A2-79: "Comments on Nuclear Safety During Fabrication of 0.002" Uranium Foil"; J. D. McLendon, J. W. Morfitt; Union Carbide Nuclear Company; June 3, 1952, Classified Secret.
8. Y-A2-98: "Comments on Nuclear Safety of S.I.R. Fuel Unit Fabrication"; J. D. McLendon, J. W. Morfitt; Union Carbide Nuclear Company; December 9, 1952; Classified Confidential.
9. Any enrichment, any size, any composition, [REDACTED]
10. Stored and transported [REDACTED]
11. Larger batches may be used if moderation, reflection, geometry, etc., are positively controlled.
12. [REDACTED]
13. Larger amounts may be used if substantiating experimental data is available.
14. A. D. Callihan, "A Review of Criticality Data Obtained by Experimental Methods," Criticality Control in Chemical and Metallurgical Plant, Karlsruhe Symposium, Organization for Economic Cooperation and Development, 1961, p. 139.



Westinghouse Electric Corporation

Bettis Atomic Power Laboratory

Box 1468, Pittsburgh 30, Pa.

WAPD-NAC-PA-3092

May 27, 1963

* Metals and Controls, Inc.
P. O. Box 898
Attleboro, Massachusetts

Attention Mr. R. L. Churchill

This is P-104-1

Please quote the following proposed changes to the order. You are requested to advise Westinghouse not later than June 4, 1963 when you will submit your quotation and by return TWX when you require release of the various drawings to preclude core delivery delay.

<u>Item</u>	<u>Drawing</u>	<u>From Revision</u>	<u>To Revision</u>
BC, DC Duct Flange Assy.	921F153	3	4
Bolt Details	935C711	3	4
BC Flange	958D556	3	4
DC Flange	958D557	3	4
C Distribution Plate	935C773	None	1
E " "	935C774	None	1
B " "	935C775	None	1
D " "	935C776	None	1
D2 Lower Module Assy.	922J716	6	7
B1 " " "	923J290	6	7
B2 " " "	922J711	7	8
E " " "	923J295	5	6
D4 " " "	922J710	6	7
D1 " " "	923J297	6	7
B2 " " "	923J296	6	7
D1 " " "	922J712	4	5
B1 " " "	922J706	4	5
D2 " " "	922J713	6	7
C1 " " "	923J299	5	6
D4 " " "	922J353	7	8
C2 " " "	922J349	6	7
E Assy. Flange	958D558, Gr. 2	5	6
D Assy. Flange	958D559	4	5
C Assy. Flange	959D160	3	5
B Assy. Flange	958D540	*	1

* From 958D558-5, Gr. 1

The following will be added as paragraph (m), Article 27, Attachment 1, General Provisions of the order:

- [REDACTED]
- (1) Westinghouse [REDACTED] listed in section 1.5.1 of Attachment 5, at no cost to Seller, FOB Carrier, Seller's Plant, freight prepaid.
 - (2) Title to Zircaloy billet furnished by Westinghouse shall remain in the Government; except that, upon delivery and acceptance of the core, title to all the residue of such material shall vest in Seller. All scrap generated from fabrication of such material becomes the property of Seller upon delivery and acceptance of the core, and shall be disposed of at his expense.
 - (3) In the event Seller requires additional zircaloy material, upon Seller's request to Westinghouse, Westinghouse shall make available for purchase by Seller, at average inventory prices, additional sponge meeting the specifications of AT-(112A)-389.
 - (4) After final acceptance by Seller, Seller shall be solely responsible for zircaloy material furnished by Westinghouse or additional sponge made available for purchase by Seller and shall bear all risks for subsequent rejection. After final acceptance by Seller, Seller shall be solely responsible for such property; shall bear all risks for subsequent rejection whether or not due to unknown or latent defects; and Westinghouse shall not be obligated to replace defective or rejectable property nor be liable for loss by reason of plant shutdown, non-operation or increased expense of operation or any other consequential loss or damage.

The following will be added as section 1.5.1 of Attachment 5, Westinghouse Furnished Material:

<u>Type</u>	<u>Quantity</u>	<u>Form</u>	<u>Shape</u>	<u>Spec</u>	<u>Use</u>
[REDACTED]	2	[REDACTED]	[REDACTED]	Mil-Z-19859B	[REDACTED]
[REDACTED]					
[REDACTED]					

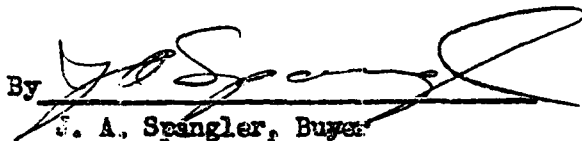
* See next paragraph concerning this.

Seller is requested to advise in his quotation the lengths of material required. The pieces will be furnished in 85 and 95 inch lengths. Seller shall plan his utilization so as to use one entire length and return to Westinghouse the maximum size possible of material [REDACTED] [REDACTED] Seller shall not return any material less than the full width furnished [REDACTED] Seller's price shall include cutting and handling required in connection with return of the piece noted.

Very truly yours,

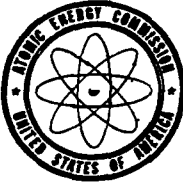
A. Cavalcante, Jr., Supervisor
Naval Cores Procurement Department

By


S. A. Spangler, Buyer

/map

cc: A. R. Satol.
J. J. Schiffgens
R. M. Matyas
A. Cavalcante, Jr.
L. F. Bendinelli
C. D. Malloy
B. May
G. H. Cohen
J. E. Howell
T. Rodgers



UNITED STATES
ATOMIC ENERGY COMMISSION
PITTSBURGH NAVAL REACTORS OPERATIONS OFFICE
P. O. BOX 1105
PITTSBURGH 30, PENNSYLVANIA

IN REPLY REFER TO:

August 29, 1958

RECEIVED
SEP 2 1958
A.M. P.M.
6 7 8 9 10 11 12 1 2 3 4 5

George P. Howland
M & C Nuclear, Inc.
Post Office Box 898
Attleboro, Massachusetts

**Subject: CONTRACT AT(11-1)-548 - Welding Procedures
Springs and Piston Ring Expander**

Dear Mr. Howland:

Contract Process Specification AP-292183, "General Welding", states that a welding procedure shall be submitted for approval prior to any production welding. By letter of July 14, 1958, you transmitted the subject welding procedure along with your Engineering Notice No. 8-1620 giving approval, with comments, to the procedure.

This procedure has been reviewed and has been found to be lacking in conformity to the contractual requirements of Drawing 903-D-745 in the following respects:

1. Age hardening (Procedure Step 4 of referenced drawing should be performed after spot welding procedure - Step 3).
2. Age hardening should be per Westinghouse Electric Corporation PDS-12163 (Note 6 of Drawing 903-D-745).
3. Subject procedure must reference Navy Welding Specification (Note 4 of referenced drawing).
4. Subject procedure does not reflect procedure Step 5 of referenced drawing (On detail "A" of referenced drawing
[REDACTED])
5. Subject procedure does not reference cleaning specification (Note 9 of referenced drawing).

- Providence & distributed
Lynch Wright
South School
T. Allen

(Woods &
Carpenter
H. C. Jones)

George P. Howland

- 2 -

August 29, 1958

6. Sample welds must be performed on material from the same heat as the production parts; a laboratory test report is required.

M & C Nuclear should transmit to the Commission evidence of satisfactory qualification tests and should make sample welds for physical testing and weld appraisal immediately prior to the production run. Evaluation of these additional tests will give assurance that machine performance is identical with the schedule described for the qualification tests.

The subject procedure is not approved and you are requested to resubmit a welding procedure which conforms to contractual requirements as expressed above.

Very truly yours,

Lawton D. Geiger
Manager