

EXHIBIT B

**FERMILAB SUBCONTRACT GENERAL PROVISIONS (FL-1)
With
(FL-100B)**

&

**LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN
FEDERAL TRANSACTIONS
(FL-68)**

CLEAN AIR AND WATER

1. DEFINITIONS AS USED IN THIS CLAUSE:

- a) "Air Act" means the Clean Air Act (42 U.S.C. 7401 et seq.).
- b) "Clean Air Standards" means,
 - 1) Any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, work practices, or other requirements contained in, issued under, or otherwise adopted under the Air Act or Executive Order 11738.
 - 2) An applicable implementation plan as described in section 110(d) of the Air Act (42 U.S.C. 7410(d));
 - 3) An approved implementation procedure or plan under section 111(c) or section 111(d) of the Air Act (42 U.S.C. 7411(c) or (d)); or
 - 4) An approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 7412(d)).
- c) "Clean water standards," means any enforceable limitation, control, condition, prohibition, standard, or other requirement promulgated under the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by local government to ensure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. 1317).
- d) "Compliance," means compliance with:
 - 1) Clean air or water standards; or
 - 2) A schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency, or an air or water pollution control

agency under the requirements of the Air Act or Water Act and related regulations.

- e) "Facility," means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a Subcontractor or sub-subcontractor, used in the performance of a subcontract or sub-subcontract. When a location or site of operations includes more than one building, plant, installation or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.
- f) "Water Act," means Clean Water Act (33 U.S.C. 1251 et seq.).

2. THE SUBCONTRACTOR AGREES:

- a) To comply with all the requirements of section 114 of the Clean Air Act (42 U.S.C. 7414) and section 308 of the Clean Water Act (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, and all regulations and guidelines issued to implement those acts before the award of this subcontract;
- b) That no portion of the work required by this subcontract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when this subcontract was awarded unless and until the EPA eliminates the name of the facility from the listing;
- c) To use best efforts to comply with clean air standards and clean water standards at the facility in which the subcontract is being performed; and
- d) To insert the substance of this clause into any non-exempt subcontract, including this subparagraph 2.(d).

Policy

The policy statement to formalize Litton EDD's commitment to PL 99-661, Section 1207, PL 100-180, Section 806, and PL 103-355 is contained in Section 2.1, SMALL BUSINESS SUBCONTRACTING PROGRAM, from the LEDD Purchasing Manual and is signed by the Division President. The LEDD policy requires Division personnel to exercise "the maximum practicable utilization of small, woman-owned small, and small disadvantaged business." Emphasis is placed on subcontracting with SDBs/WOSBs/HBCUs/MIs. The success of this policy is demonstrated by the fact that LEDD has exceeded the 5% SDB goal every year for the past nine years. LEDD has earned numerous awards for its subcontracting program.

Past Performance

Litton Electron Devices Division (LEDD), San Carlos Operation was given a rating of OUTSTANDING for Fiscal years 1987 thru 1995 and won the Dwight D. Eisenhower Award for excellence in 1996. LEDD San Carlos, received from the Defense Contract Management Area Operation-San Francisco an award for exceeding the 5% goal for subcontracting with Small Disadvantaged Businesses, during Fiscal Years 1991, 1992, 1993, 1994, 1995 and 1996. The U.S. Small Business Administration (SBA) gave LEDD a rating of EXCELLENT and the Award for Distinction in 1993. LEDD was a finalist for the SBA's Dwight D. Eisenhower Award for Excellence in 1994, 1995 and won the award in 1996.

Development of Percentage Goals

When LEDD has experience manufacturing the product being proposed or a similar product, goals are established which exceed historical performance even if the historical performance exceeded the PL 99-661 or PL 103-355 goals. When LEDD has no experience manufacturing the product being proposed, the SB, WOSB and SDB goals will exceed 20% for SB's and exceed 5% for WOSBs and SDBs. The SB/SDB/WOSB/HBCU/MI firms identified on the Enclosure have been qualified by LEDD, and in most cases were the previous suppliers for those parts. LEDD policy requires the inclusion of the previous supplier on the RFQ supplier list for the immediate buy or provide written justification for excluding the previous supplier. Therefore, there is a very high probability that all the SB/SDB/WOSB/HBCU/MI firms on the Enclosure will be solicited for this effort. Additionally, LEDD Buyers are encouraged to qualify new SB/SDB/WOSB/HBCU/MI suppliers.

Indirect Costs

Indirect and Overhead costs are not included in the subcontracting goals which are calculated as discussed above.

Outreach / Internal Efforts

Outreach Efforts

Contacts will be developed and maintained with business development organizations. LEDD actively participates with the Industry Council for Small Business Development (Industry Council). The Industry Council helps Small, WOSB, and SDB businesses to sell to primes, and helps primes in their effort to meet or beat subcontracting goals.

Attendance at small , woman-owned small, and small disadvantaged business procurement conferences and trade fairs will be accomplished on a regular basis. Examples of functions include participation in events sponsored by the Minority Input Committee of the Northern California Purchasing Council, the Minority Supplier Conference at Apple Computer, Women in Design & Construction, Central California Federal Small Business Council, Association of the U.S. Army, and the East Bay Small Business Development Center. LEDD typically attends over six such conferences annually.

LEDD will utilize SBA's PASS system when practicable. LEDD maintains a description of HBCU/MI capabilities for use in evaluating the involvement of these firms for future product plans or participation on individual contracts.

A Litton supplier file will be maintained to help buyers identify small, women-owned small, and small disadvantaged businesses for traditional WOSB and SDB items and for technologically challenging items as a resource when Purchasing must locate sources with specialized capabilities.

The National Minority Business Directory (TRY US) will be used by LEDD Purchasing personnel, and will be recommended to WOSBs, and SDBs and other prime contractors.

The following technical assistance will be provided to WOSBs and SDBs:

LEDD established a Manufacturing Engineering department with personnel trained to conduct facility/capability reviews, and provide technical assistance. The charter of this department includes assistance to SB/WOSB/SDB concerns which require technical assistance, and this assistance is routinely provided to SB/WOSB/SDB concerns. Manufacturing Engineering is available to make technical determinations when required to overcome obstacles to award future contracts to SDBs/WOSBs/HBCUs/MIs.

Tooling will be loaned to WOSBs and SDBs to help them make parts to meet Litton specifications.

Technical advice will be provided by the Procurement Quality Engineer and the Product Group Engineers as needed to ensure an understanding of Litton EDD's technical requirements.

SDBs and WOSBs are invited to discuss their capabilities during joint technical/purchasing meetings.

Although LEDD, as an electronics component supplier, has not been able to involve HBCUs and MIs in products sold to the government, it has donated excess data processing equipment to an HBCU, and has twice represented Litton Corporate at Mentor-Protege Roundtable Meetings chaired by Senator Sam Nunn.

Buyers have gathered favorable information on the performance of small businesses and SDBs to overcome technical objections and qualify such firms to manufacture parts to be incorporated in LEDD products.

Description of Supplies and Services to be Subcontracted

In those cases where LEDD has experience making the product being proposed or a similar product, a computer listing (Enclosure) is provided which identifies the suppliers used for purchased parts by name during the most recent manufacturing cycle and to target specific SBs/SDBs/WOSBs/HBCUs/MIs for subcontracting. The business sizes on this printout are depicted by the following codes:

<u>Code</u>	<u>Business Classification</u>
1	Large Business
2	Small Business
3	Small Disadvantaged Business
4	Woman-Owned Small Business
5	Woman-Owned SDB

LEDD policy requires the buyer to solicit the previous supplier of each purchased part or provide a written justification for not soliciting the previous supplier. Buyers are encouraged to include at least one WOSB and one SDB on solicitation lists for each competitive procurement.

Litton EDD makes a fine component breakout for subcontracting rather than rely on large subsystem suppliers. This fine component breakout maximizes opportunities for small, SDB, and WOSB concerns.

In those cases where LEDD has no experience with the same or a similar product, the Enclosure is a listing of small, woman-owned, and small disadvantaged businesses which provide machining, ceramics, fasteners, or packaging materials which represent 90% of the opportunities to manufacture components incorporated in LEDD products sold to the government. A listing of large businesses which may be used to provide certain products is also included in the Enclosure. LEDD continuously attempts to develop new small, woman-owned, and SDB concerns which can be qualified to manufacture such components.

- (f) Attending or arranging for attendance of company counselors at Business Enterprise Seminars and Trade Fairs.
- (g) Conducting or arranging for the conduct of motivational training for Purchasing Personnel pursuant to the Intent P.L. 95-507 and P.L. 103-355.
- (h) Preparing and submitting periodic subcontracting reports as required.
- (i) Coordinating contractor's activities during the conduct of compliance reviews by Federal agencies.
- (j) Coordinating the conduct of the contractor's activities involving its SB/WOSB/SDB/HBCU/MI subcontracting program.

Records Maintained

The offeror (contractor) agrees to maintain at least the following types of records to document compliance with this subcontracting plan.

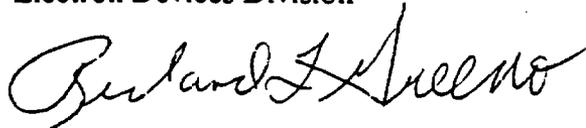
- (a) SB/WOSB/SDB/HBCU/MI source lists, guides, and other data identifying SB/WOSB/SDB/HBCU/MI Sources..
- (b) Organizations contacted to identify woman-owned small and small disadvantaged business sources.
- (c) On a contract-by-contract basis, records on all subcontract solicitations over \$100,000.00 indicating on each solicitation (1) whether small business concerns were solicited, or if not, why not; (2) whether SB/WOSB/SDB/HBCU/MI concerns were solicited and if not, why not; and (3) reasons for the failure of solicited small or SDB/WOSB/HBCU/MI concerns to receive the subcontract award.
- (d) Records to support other outreach efforts: Contacts with Minority, Woman-owned, and Small Business Trade Associations, and attendance at Small, Woman-Owned and Minority business procurement conferences and trade fairs.
- (e) Records to support internal activities to guide and encourage Buyers and to evaluate compliance.

In consultation with, and approval of, our Small Business Liaison Officer, internal reports will be issued to periodically monitor the progress of such subcontracting programs.

Make or Buy

Adequate and timely consideration of small business and SDB/WOSB/HBCU/MI concerns will be given in all make or buy decisions.

Litton Systems, Inc.
Electron Devices Division

A handwritten signature in cursive script, reading "Richard L. Greeno".

Richard L. Greeno
Senior Subcontract Administrator
Small Business Liaison Officer

Enclosure
RG:cmast3

EXHIBIT E

LITTON 'KLYSTRON' WARRANTY

FERMILAB SUBCONTRACT GENERAL PROVISIONS

1. Definitions	1
2. Covenant Against Contingent Fees	1
3. Sub-subcontracts for Commercial Items and Commercial Components	1
4. Convict Labor	2
5. Federal, State and Local Taxes	2
6. Affirmative Action for Special Disabled and Vietnam Era Veterans	2-4
7. Notice of Labor Disputes	4
8. Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns	4
9. Assignment	4
10. Audit and Records	4-5
11. Equal Opportunity	5-6
12. Applicable Law	6
13. Affirmative Action for Handicapped Workers	6
14. Modification Proposals – Price Breakdown	6
15. Restrictions on Certain Foreign Purchases	6-7
16. Clean Air and Water	7
17. Fermilab-Furnished Property	7-9
18. Independent Contractor	9
19. Certified Cost or Pricing Data	9-10
20. Restrictions on Sub-subcontractor Sales to the Government	10
21. Anti-Kickback Procedures	10
22. Contract Work Hours and Safety Standards Act – Overtime Compensation – General	10-11
23. Preference for U.S. Flag Air Carriers	11
24. Limitations on Subcontracting	11
25. Preference for Privately Owned U.S. Flag Commercial Vessels	12
26. Protecting Fermilab and the Government's Interest When Sub-subcontracting with Sub-subcontractors Debarred, Suspended, or Proposed for Debarment	12
27. Controlled Substances (Drug-Free Workplace)	12
28. Printing	13
29. Notification of Ownership Changes	13

1. DEFINITIONS

- 1.1 As used throughout this subcontract, the following terms shall have the meanings set forth below:
- (a) The term "Government" shall mean the Government of the United States acting through the United States Department of Energy or its successor.
 - (b) The term "Department" shall mean the United States Department of Energy or any duly authorized representative thereof.
 - (c) The term "Fermilab" shall mean Universities Research Association, Inc., a not-for-profit corporation organized under the laws of the District of Columbia, or any duly authorized representative thereof.
 - (d) Except as otherwise provided in this subcontract, the term "sub-subcontracts" includes purchase orders under this subcontract.
 - (e) "Manager" shall mean the person in charge of business services for Fermilab or his written designee.

2. COVENANT AGAINST CONTINGENT FEES

- 2.1 (a) The Subcontractor warrants that no person or agency has been employed or retained to solicit or obtain this subcontract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty Fermilab shall have the right to annul this subcontract without liability or, in its discretion to deduct from the subcontract price or consideration, or otherwise recover, the full amount of the contingent fee.
- (b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.
- "Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.
- "Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.
- "Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter. For purposes of this clause, the term "Government" includes "Fermilab."

3. SUB-SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS

- 3.1 As used in this clause, the terms "commercial component," "commercial item," and "nondevelopmental items" shall have the meanings set forth in the clause at Federal Acquisition Regulation (FAR) 52.202-1, Definitions.
- 3.2 To the maximum extent practicable, the Subcontractor shall incorporate, and shall require its sub-subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this subcontract.
- 3.3 Except to the extent required elsewhere in this subcontract or where necessary to establish the reasonableness of prices under FAR Subpart 15, the Subcontractor is not required to include any provisions other than clauses 6, 11, and 13 of this subcontract in any sub-subcontract at any tier for commercial items or nondevelopmental items that would be incorporated as components of items to be supplied under this subcontract.
- 3.4 The Subcontractor shall include the terms of this clause, including this paragraph 3.4, in all sub-subcontracts awarded under this subcontract.

10.3 EXAMINATION OF COSTS. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable subcontract, or any combination of these, the Subcontractor shall maintain and Fermilab, or an authorized representative of Fermilab, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this subcontract. This right of examination shall include inspection at all reasonable times of the Subcontractor's plants, or parts of them, engaged in performing the subcontract.

10.4 COST OR PRICING DATA. If the Subcontractor has been required to submit cost or pricing data in connection with any pricing action relating to this subcontract, Fermilab, or an authorized representative of Fermilab, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Subcontractor's records, including computations and projections, related to -

- (1) The proposal for the subcontract, sub-subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the subcontract, sub-subcontract, or modification; or
- (4) Performance of the subcontract, sub-subcontract or modification.

10.5 COMPTROLLER GENERAL - (a) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Subcontractor's directly pertinent records involving transactions related to this subcontract or a sub-subcontract hereunder. (b) This paragraph may not be construed to require the Subcontractor or sub-subcontractor to create or maintain any record that the Subcontractor or sub-subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

10.6 REPORTS. If the Subcontractor is required to furnish cost, funding, or performance reports, Fermilab or an authorized representative of Fermilab shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (a) the effectiveness of the Subcontractor's policies and procedures to produce data compatible with the objective of these reports and (b) the data reported.

10.7 AVAILABILITY. The Subcontractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs 10.2 through 10.6 of this clause, for examination, audit, or reproduction, until 3 years after final payment under this subcontract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this subcontract. In addition -

- (a) If this subcontract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement; and
- (b) Records relating to litigation or the settlement of claims arising under or relating to this subcontract shall be made available until such litigation or claims are finally resolved.

10.8 The Subcontractor shall insert a clause containing all the terms of this clause, including this paragraph 10.8, in all sub-subcontracts under this subcontract that exceed \$100,000, and -

- (a) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;
- (b) For which cost or pricing data are required; or
- (c) That require the sub-subcontractor to furnish reports as discussed in paragraph 10.6 of this clause.

The clause may be altered only as necessary to identify properly the contracting parties.

11. EQUAL OPPORTUNITY

11.1 If, during any 12-month period (including the 12 months preceding the award of this subcontract), the Subcontractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Subcontractor shall comply with subparagraphs 11.2 (a) thru (k) below. Upon request, the Subcontractor shall provide information necessary to determine the applicability of this clause.

11.2 During the performance of this subcontract, the Subcontractor agrees as follows:

- (a) The Subcontractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
- (b) The Subcontractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to:
 - (i) Employment
 - (ii) Upgrading;
 - (iii) Demotion;
 - (iv) Transfer;
 - (v) Recruitment or recruitment advertising;
 - (vi) Layoff or termination;
 - (vii) Rates of pay or other forms of compensation; and
 - (viii) Selection for training, including apprenticeship.
- (c) The Subcontractor shall post in conspicuous places available to employees and applicants for employment notices to be provided by Fermilab that explain this clause.
- (d) The Subcontractor shall, in all solicitations or advertisement for employees placed by or on behalf of the Subcontractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (e) The Subcontractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, the notice, to be provided by Fermilab, advising the labor union or workers representative of the Subcontractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Subcontractor shall comply with Executive Order No. 11246 as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Subcontractor shall furnish to Fermilab all information required by Executive Order No. 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. Standard Form 100 (EEO-1), or any successor form, is the prescribed form to be filed within 30 days following the award, unless filed within 12 months preceding the date of award.

17.11 COMMUNICATIONS. All communications under this clause shall be in writing.

18. INDEPENDENT CONTRACTOR

In all respects pertaining to this subcontract the Subcontractor is, and shall act as an independent Subcontractor and the Subcontractor shall not be or act as the agent, employee or servant of Fermilab or the Government.

Without limiting the generality of the foregoing it is understood and agreed:

- (1) that all persons employed by the Subcontractor in the performance of this agreement shall be employees of the Subcontractor and not employees of Fermilab or the Government, and
- (2) that the Subcontractor shall not enter into any contract with a third party which purports to obligate or bind Fermilab or the Government.

19. CERTIFIED COST OR PRICING DATA

19.1 (a) The Subcontractor shall require under the situations described in (b) below, unless exempted under the exceptions set forth in (c) below, each sub-subcontractor under this subcontract to submit cost or pricing data and to certify that, to the best of his knowledge and belief, such cost or pricing data are accurate, complete, and current.

(b) Except as provided in (c) below, certified cost or pricing data shall be submitted prior to

- (i) the award of each sub-subcontract, the price of which is expected to exceed \$500,000 and
- (ii) the negotiation of the price of each change or modification to a sub-subcontract under this subcontract for which the price adjustment is expected to exceed \$500,000.

(c) Certified cost or pricing data need not be furnished pursuant to this paragraph (c) where:

- (i) the Subcontractor has not been required to furnish cost or pricing data; or
- (ii) the price adjustment is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or the prices are set by law or regulation; and the Subcontractor states in writing the basis for applying this exception.

(d) In submitting the cost or pricing data, the sub-subcontractor shall use the form of certificate set forth in paragraph 19.2 below and shall certify that the data are accurate, complete, and current. Such certificate and data (actual or identified, as provided in the certificate prescribed below) shall be submitted by sub-subcontractors to the next higher-tier sub-subcontractor, or the Subcontractor, as applicable, for retention.

19.2 The certificates required by this clause shall be in the form set forth below:

SUBCONTRACTOR'S CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that, to the best of my knowledge and belief, cost or pricing data submitted in writing, or specifically identified in writing if actual submission of the data is impracticable (see FAR

15.804-6(d)), to Fermilab in support of _____.*

_____ are accurate, complete, and current as of _____.**
(date)

FIRM _____

NAME _____

TITLE _____

DATE OF EXECUTION*** _____

* Identify the proposal, quotation, request for price adjustment, or other submission involved.

** Insert the day, month, and year when price agreement was reached.

*** Insert the day, month, and year when price negotiations were concluded and price agreement was reached or, if applicable, another date agreed upon between the parties that is as close as practicable to the date of agreement on price.

19.3 For purposes of verifying that certified cost or pricing data submitted in conjunction with the negotiation of this subcontract or any subcontract change or other modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$500,000 were accurate, complete, and current, Fermilab, the Department or any of its authorized representatives shall until the expiration of three (3) years from the date of final payment under this subcontract, have the right to examine those books, records, documents, papers, and other supporting data which involve transactions related to this subcontract or which will permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

19.4 Whenever the price of any change or other modification to this subcontract involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$500,000, the Subcontractor agrees to furnish Fermilab certified cost or pricing data, using the certificate set forth in paragraph 19.2 above unless the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

19.5 The requirement for submission of certified cost or pricing data with respect to any change or other modification does not apply to any sub-subcontract change or other modification, at any tier, where the subcontract is firm fixed-price or fixed-price with escalation unless such change or other modification results from a change or modification to the subcontract, nor does it apply to a sub-subcontract change or modification, at any tier, where the subcontract is not firm fixed-price or fixed-price with escalation, unless the price for such change or other modification becomes reimbursable under the subcontract.

19.6 The Subcontractor agrees to insert paragraph 19.3 without change and the substance of paragraphs 19.1, 19.2, 19.4, 19.5, and 19.6 of this clause in each sub-subcontract hereunder in excess of \$500,000 and in each sub-subcontract of \$500,000 or less at the time of making a change or other modification thereto which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$500,000.

19.7 If Fermilab determines that any price, including profit or fee, negotiated in connection with this subcontract or any cost reimbursable under this subcontract was increased by any significant sums because the Subcontractor, or any sub-subcontractor pursuant to this clause or any sub-subcontract clause herein required, furnished incomplete or inaccurate cost or pricing data or data not current as certified in the Subcontractor's certificate of current cost or pricing data, then such price or cost shall be reduced accordingly and the subcontract shall be modified in writing to reflect such reduction.

28. PRINTING

28.1 To the extent that duplicating or printing services may be required in the performance of this subcontract, the Subcontractor shall provide or secure such services in accordance with the Government Printing and Binding Regulations, Title 44 of the U.S. Code, and DOE Directives relative thereto.

28.2 The term "Printing" includes the following processes: composition, platemaking, presswork, binding, microform publishing, or the end items produced by such processes. Provided, however, that performance of a requirement under this subcontract involving the duplication of less than 5,000 copies of a single page, or no more than 25,000 units in the aggregate of multiple pages, will not be deemed to be printing.

28.3 Printing services not obtained in compliance with this guidance shall result in the cost of such printing being disallowed or a reduction in the subcontract price by an amount equalling the cost of the printing to the Subcontractor.

28.4 In all sub-subcontracts hereunder which require printing (as that term is defined in Title I of the U.S. Government Printing and Binding Regulations and subsection 28.2), the Subcontractor shall include a provision substantially the same as this clause.

29. NOTIFICATION OF OWNERSHIP CHANGES

29.1 This clause applies (1) if certified cost or pricing data was submitted by the Subcontractor in connection with the award of this subcontract, or (2) if the Subcontractor furnishes certified cost or pricing data under paragraph 19.4 of the clause entitled "Certified Cost or Pricing Data" in connection with a change or other modification to this subcontract.

29.2 The Subcontractor shall make the following notifications in writing:

- (a) When the Subcontractor becomes aware that a change in its ownership has occurred, or is certain to occur, which could result in changes in the valuation of its capitalized assets in the accounting records, the Subcontractor shall notify Fermilab within 30 days.
- (b) The Subcontractor shall also notify Fermilab within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

29.3 The Subcontractor shall: (1) maintain current, accurate, and complete inventory records of assets and their costs; (2) provide Fermilab or designated representative ready access to the records upon request; (3) ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Subcontractor's ownership changes; and (4) retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Subcontractor ownership change.

29.4 The Subcontractor shall include the substance of this clause in all sub-subcontracts under this subcontract which meet the applicability requirement of FAR 15.804-8(g).

- (2) The Subcontractor agrees that to the extent it receives or is given access to data necessary for the performance of this subcontract which contain restrictive markings, the subcontractor shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the DOE via URA.
- (3) The Subcontractor agrees not to establish claim to copyright in computer software first produced in the performance of this subcontract without prior written permission of the DOE via URA. When such permission is granted, the DOE shall specify appropriate terms to assure dissemination of the software. The Subcontractor shall promptly deliver to the DOE or to the Patent Counsel designated by the DOE a duly executed and approved instrument fully confirmatory of all rights to which the Government is entitled, and other terms pertaining to the computer software to which claim to copyright is made.

(e) *Unauthorized Marking of Data.*

- (1) Notwithstanding any other provisions of this subcontract concerning inspection or acceptance, if any data delivered under this subcontract are marked with the notices specified in subparagraphs (g)(2) or (g)(3) below and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this subcontract, the DOE may at any time either return the data to the Subcontractor, or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.
 - (i) The DOE shall make written inquiry to the Subcontractor affording the Subcontractor 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;
 - (ii) If the Subcontractor fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the DOE for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.
 - (iii) If the Subcontractor provides written justification to substantiate the propriety of the markings within the period set in subdivision (i) above, the DOE shall consider such written justification and determine whether or not the markings are to be canceled or ignored. If the DOE determines that the markings are authorized, the Subcontractor shall be so notified in writing. If the DOE determines that the markings are not authorized, the DOE shall furnish the Subcontractor a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Subcontractor files suit in a court of competent jurisdiction within 90 days of receipt of the DOE's decision. The Government shall continue to abide by the markings under this subdivision (iii) until final resolution of the matter either by the DOE's determination becoming final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.
- (2) The time limits in the procedures set forth in subparagraph (1) above may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.
- (3) This paragraph (e) does not apply if this subcontract is for a major system or for support of a major system by a civilian agency other than NASA and the U.S. Coast Guard subject to the provisions of Title III of the Federal Property and Administrative Services Act of 1949.
- (4) Except to the extent the Government's action occurs as the result of final disposition of the matter by a court of competent jurisdiction, the Subcontractor is not precluded by this paragraph (e) from bringing a claim under the Contract Disputes Act, including pursuant to the Disputes clause of this subcontract, as applicable, that may arise as the result of the Government removing or ignoring authorized markings on data delivered under this subcontract.

(f) *Omitted or Incorrect Markings.*

- (1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) below, or the copyright notice required by paragraph (c) above, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Subcontractor may request, within 6 months (or a longer time approved by the DOE for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Subcontractor's expense, and the DOE may agree to do so if the Subcontractor:

LIMITATION ON PAYMENTS TO INFLUENCE
CERTAIN FEDERAL TRANSACTIONS

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Contractor," as used in this clause, means the first tier subcontractor in privity of contract with URA-Fermilab.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization" as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if charged, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, included the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, Appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Prime Contractor," as used in this clause, means URA-Fermilab.

- (B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes -
- (1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
 - (2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
 - (3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
- (C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person which requests or received any subcontract exceeding \$100,000 under the Federal contract.
- (D) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the Prime Contractor. The Prime Contractor shall submit all disclosures to the Department of Energy at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.
- (iv) Agreement. The Contractor agrees not to make any payment prohibited by the clause.
- (v) Penalties.
- (A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent Fermilab from seeking any other remedy that may be applicable.
 - (B) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.
- (vi) Cost allowability. Nothing in this clause makes allowable or reasonable any cost which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

- (f) As directed by Fermilab, transfer title and deliver to Fermilab (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the subcontract had been completed, would be required to be furnished to Fermilab.
- (g) Complete performance of the work not terminated.
- (h) Take any action that may be necessary, or that Fermilab may direct, for the protection and preservation of the property related to this subcontract that is in the possession of the Subcontractor and in which Fermilab has or may acquire an interest.
- (i) Use its best efforts to sell, as directed or authorized by Fermilab, any property of the types referred to in subparagraph (f) above; *provided*, however, that the Subcontractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, Fermilab. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by Fermilab under this Subcontract, credited to the price or cost of the work, or paid in any other manner directed by Fermilab.

7.3 After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Subcontractor may submit to Fermilab a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by Fermilab. The Subcontractor may request Fermilab to remove those items or enter into an agreement for their storage. Within 15 days, Fermilab will accept title to those items and remove them or enter into a storage agreement. Fermilab may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

7.4 After termination, the Subcontractor shall submit a final termination settlement proposal to Fermilab in the form and with the certification prescribed by Fermilab. The Subcontractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by Fermilab upon written request of the Subcontractor within this 1-year period. However, if Fermilab determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Subcontractor fails to submit the proposal within the time allowed, Fermilab may determine, on the basis of information available, the amount, if any, due the Subcontractor because of the termination and shall pay the amount determined.

7.5 Subject to preceding paragraph 7.4, the Subcontractor and Fermilab may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph 7.5 or paragraph 7.6 below, exclusive of costs shown in subparagraph 7.6 (3) below, may not exceed the total subcontract price as reduced by (a) the amount of payments previously made and (2) the subcontract price of work not terminated. The subcontract shall be amended, and the Subcontractor paid the agreed amount. Paragraph 7.6 below shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

7.6 If the Subcontractor and Fermilab fail to agree on the whole amount to be paid because of the termination of work, Fermilab shall pay the Subcontractor the amounts determined by Fermilab as follows, but without duplication of any amounts agreed

on under paragraph 7.5 above:

- (1) The subcontract price for completed supplies or services accepted by Fermilab (or sold or acquired under subparagraph 7.2 (i)) not previously paid for, adjusted for any saving of freight and other charges.
 - (2) The total of –
 - i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph 7.6 (1) above;
 - ii) The cost of settling and paying termination settlement proposals under terminated sub-subcontracts that are properly chargeable to the terminated portion of the subcontract if not included in subdivision (i) above; and
 - iii) A sum, as profit on subdivision (i) above, determined by Fermilab under 49.202 of the Federal Acquisition Regulation, in effect on the date of this subcontract, to be fair and reasonable; however, if it appears that the Subcontractor would have sustained a loss on the entire subcontract had it been completed, Fermilab shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.
 - (3) The reasonable costs of settlement of the work terminated, including –
 - i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;
 - ii) The termination and settlement of sub-subcontracts (excluding the amounts of such settlements); and
 - iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory
- 7.7** Except for normal spoilage, and except to the extent that Fermilab expressly assumed the risk of loss, Fermilab shall exclude from the amounts payable to the Subcontractor under paragraph 7.6 above, the fair value, as determined by Fermilab, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to Fermilab or to a buyer.
- 7.8** The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this subcontract, shall govern all costs claimed, agreed to, or determined under this clause.
- 7.9** In arriving at the amount due the Subcontractor under this clause, there shall be deducted –
- (1) All unliquidated advance or other payments to the Subcontractor under the terminated portion of this subcontract;
 - (2) Any claim which Fermilab has against the Subcontractor under this subcontract; and
 - (3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Subcontractor or sold under the provisions of this clause and not recovered by or credited to Fermilab.

Set-Aside Program

Should it become necessary to restrict certain procurements to SDBs or WOSBs to ensure that they will have an equitable opportunity to compete for subcontracts, Litton EDD will plan to institute an SDB or WOSB Set-Aside program. However, at this time subcontract awards to WOSBs and SDBs are well over the 5% goals, and this level of activity demonstrates that SDBs and WOSBs are presently offered an equitable opportunity to compete for subcontracts.

Efforts to Afford SB/SDB/WOSB/HBCU and MI an Equitable Opportunity to Participate in Acquisitions.

LEDD generates monthly computer reports with dollar and percentage of dollars awarded to SB/SDB/WOSB/WOSDB firms to include details on each buyer's performance. This report is instrumental in rewarding buyers for exceptional support of the socioeconomic subcontracting program and identifying those buyers who need to concentrate more on awarding orders to SB/SDB/WOSB/WOSDB concerns.

The Enclosure identifies representative SB/WOSB/SDB/WOSDB firms which will be given an opportunity to participate in this effort. When the enclosure is a copy of a computer printout, it lists the specific companies which provided the purchased materials during the most recent buy for the same or a similar product. Litton EDD will target these specific firms which are included in this enclosure for the components they supplied during the last buy. Additionally, Litton EDD has an ongoing program to develop SB/SDB/WOSB/HBCU/MI concerns and does conduct capability reviews as required.

LEDD has recently awarded relatively high dollar value, long term requirements type blanket purchase agreements (BPAs) to SB/WOSB/SDB concerns to supply parts to be incorporated in LEDD products. Numerous such BPAs were awarded to WOSBs and SDBs to ensure the continuance of long-range relationships.

The following additional efforts will be taken to ensure that small and small disadvantaged business concerns, Women-Owned Small Business Concerns, Historically Black Colleges and Universities, and Minority Institutions will have an equitable opportunity to compete for subcontracts:

Outreach / Internal Efforts

Outreach Efforts

Contacts will be developed and maintained with business development organizations. LEDD actively participates with the Industry Council for Small Business Development (Industry Council). The Industry Council helps Small, WOSB, and SDB businesses to sell to primes, and helps primes in their effort to meet or beat subcontracting goals.

Attendance at small , woman-owned small, and small disadvantaged business procurement conferences and trade fairs will be accomplished on a regular basis. Examples of functions include participation in events sponsored by the Minority Input Committee of the Northern California Purchasing Council, the Minority Supplier Conference at Apple Computer, Women in Design & Construction, Central California Federal Small Business Council, Association of the U.S. Army, and the East Bay Small Business Development Center. LEDD typically attends over six such conferences annually.

LEDD will utilize SBA's PASS system when practicable. LEDD maintains a description of HBCU/MI capabilities for use in evaluating the involvement of these firms for future product plans or participation on individual contracts.

A Litton supplier file will be maintained to help buyers identify small, women-owned small, and small disadvantaged businesses for traditional WOSB and SDB items and for technologically challenging items as a resource when Purchasing must locate sources with specialized capabilities.

The National Minority Business Directory (TRY US) will be used by LEDD Purchasing personnel, and will be recommended to WOSBs, and SDBs and other prime contractors.

The following technical assistance will be provided to WOSBs and SDBs:

LEDD established a Manufacturing Engineering department with personnel trained to conduct facility/capability reviews, and provide technical assistance. The charter of this department includes assistance to SB/WOSB/SDB concerns which require technical assistance, and this assistance is routinely provided to SB/WOSB/SDB concerns. Manufacturing Engineering is available to make technical determinations when required to overcome obstacles to award future contracts to SDBs/WOSBs/HBCUs/MIs.

Tooling will be loaned to WOSBs and SDBs to help them make parts to meet Litton specifications.

Technical advice will be provided by the Procurement Quality Engineer and the Product Group Engineers as needed to ensure an understanding of Litton EDD's technical requirements.

SDBs and WOSBs are invited to discuss their capabilities during joint technical/purchasing meetings.

Internal Efforts

The following internal efforts will be made to guide and encourage Buyers:

Workshops, Seminars and Training Programs will be conducted to train and motivate Purchasing Department personnel to maximize the use of SB/WOSB/SDB concerns.

Subcontracting results will be monitored to evaluate compliance with this subcontracting plan.

Small, Woman-Owned Small, and Small Disadvantaged Business concern source lists, guides, and other data identifying small, woman-owned small, and small disadvantaged business concerns, Historically Black Colleges and Universities, and Minority Institutions will be maintained and utilized by Buyers in soliciting subcontractors.

A directory which includes SDBs used by LEDD and other Litton divisions is made available to Procurement personnel.

Incentive Program

An incentive program has been instituted to reward Buyers who promote the use of SB/WOSB/SDB/HBCU/MI firms.

The buyer selected for this award receives a lunch at an ethnic restaurant, a framed certificate, & favorable mention in his/her performance appraisal.

Effort Undertaken to Broaden SB, WOSB, and SDB Active Supplier Base

LEDD sponsors the membership of the SBLO and the Small Business Coordinator in the Industry Council for Small Business Development (ICSBD). The ICSBD is a non-profit corporation with over sixty large business, government contractors as members. The Annual Industry Council Procurement Fair is attended by approximately 3,000 people and has approximately 250 exhibitors. LEDD exhibits annually, and schedules all Purchasing Department personnel to participate in this annual event. The SBLO, Small Business Coordinator, and one buyer attend each monthly ICSBD meeting.

Litton EDD has long-term partnership arrangements with WOSBs and SDBs to perform technologically challenging tasks such as precision machining of components incorporated in weapons systems, and calibration and repair of precision measurement equipment. Buyers are encouraged to include at least one WOSB and SDB on the supplier list for each competitive procurement. Litton EDD continuously seeks out new SDB/WOSB/MI/HBCU firms to supply technologically challenging products & services.

Although LEDD, as an electronics component supplier, has not been able to involve HBCUs and MIs in products sold to the government, it has donated excess data processing equipment to an HBCU, and has twice represented Litton Corporate at Mentor-Protege Roundtable Meetings chaired by Senator Sam Nunn.

Buyers have gathered favorable information on the performance of small businesses and SDBs to overcome technical objections and qualify such firms to manufacture parts to be incorporated in LEDD products.

Description of Supplies and Services to be Subcontracted

In those cases where LEDD has experience making the product being proposed or a similar product, a computer listing (Enclosure) is provided which identifies the suppliers used for purchased parts by name during the most recent manufacturing cycle and to target specific SBs/SDBs/WOSBs/HBCUs/MIs for subcontracting. The business sizes on this printout are depicted by the following codes:

<u>Code</u>	<u>Business Classification</u>
1	Large Business
2	Small Business
3	Small Disadvantaged Business
4	Woman-Owned Small Business
5	Woman-Owned SDB

LEDD policy requires the buyer to solicit the previous supplier of each purchased part or provide a written justification for not soliciting the previous supplier. Buyers are encouraged to include at least one WOSB and one SDB on solicitation lists for each competitive procurement.

Litton EDD makes a fine component breakout for subcontracting rather than rely on large subsystem suppliers. This fine component breakout maximizes opportunities for small, SDB, and WOSB concerns.

In those cases where LEDD has no experience with the same or a similar product, the Enclosure is a listing of small, woman-owned, and small disadvantaged businesses which provide machining, ceramics, fasteners, or packaging materials which represent 90% of the opportunities to manufacture components incorporated in LEDD products sold to the government. A listing of large businesses which may be used to provide certain products is also included in the Enclosure. LEDD continuously attempts to develop new small, woman-owned, and SDB concerns which can be qualified to manufacture such components.

When an SDB which has been used for a certain commodity in the past but is no longer available for subcontracting, LEDD will consider including only SDBs on the solicitation list. Printed labels were purchased to attach to history folders when only SDBs are to be included on the list of prospective suppliers.

Major subsystems/key project elements are not normally subcontracted out since Litton EDD is generally a components supplier. However, should major subsystems or key elements be subcontracted, Litton EDD will ensure the flowdown of its SDB/WOSB/HBCU/MI subcontracting philosophy. Additional information on flowdown to subcontractors is discussed below under the heading: "Flowdown of SB/WOSB/SDB Subcontracting Efforts to Other Large Businesses" (pp.10 &11).

Program Administration

The designated individual who will administer the subcontracting program for this contract is:

Name: Richard L. Greeno

Address & Telephone: Litton Electron Devices
960 Industrial Road M/S 14
San Carlos, CA 94070-4194
(415) 591-8411 Ext. 2357

Title : Senior Subcontract Administrator
Small Business Liaison Officer

This individual's specific duties, as they relate to the firm's subcontracting program, are as follows:

- (a) Development, preparation, and execution of individual subcontracting plans; monitoring performance relative to contractual subcontracting requirements contained therein.
- (b) Developing and maintaining lists of small, woman-owned, and small disadvantaged business concerns, Historically Black Colleges and Universities, and Minority Institutions from all possible sources.
- (c) Ensuring that procurement packages are structured to permit SB/WOSB/SDB/HBCU/MI concerns to participate to the maximum extent possible.
- (d) Assuring the inclusion of SB/WOSB/SDB/HBCU/MI concerns in solicitations for products or services which they are capable of providing.
- (e) Ensuring the establishment and maintenance of records of solicitations and subcontract award activity.

- (f) Attending or arranging for attendance of company counselors at Business Enterprise Seminars and Trade Fairs.
- (g) Conducting or arranging for the conduct of motivational training for Purchasing Personnel pursuant to the Intent P.L. 95-507 and P.L. 103-355.
- (h) Preparing and submitting periodic subcontracting reports as required.
- (i) Coordinating contractor's activities during the conduct of compliance reviews by Federal agencies.
- (j) Coordinating the conduct of the contractor's activities involving its SB/WOSB/SDB/HBCU/MI subcontracting program.

Records Maintained

The offeror (contractor) agrees to maintain at least the following types of records to document compliance with this subcontracting plan.

- (a) SB/WOSB/SDB/HBCU/MI source lists, guides, and other data identifying SB/WOSB/SDB/HBCU/MI Sources..
- (b) Organizations contacted to identify woman-owned small and small disadvantaged business sources.
- (c) On a contract-by-contract basis, records on all subcontract solicitations over \$100,000.00 indicating on each solicitation (1) whether small business concerns were solicited, or if not, why not; (2) whether SB/WOSB/SDB/HBCU/MI concerns were solicited and if not, why not; and (3) reasons for the failure of solicited small or SDB/WOSB/HBCU/MI concerns to receive the subcontract award.
- (d) Records to support other outreach efforts: Contacts with Minority, Woman-owned, and Small Business Trade Associations, and attendance at Small, Woman-Owned and Minority business procurement conferences and trade fairs.
- (e) Records to support internal activities to guide and encourage Buyers and to evaluate compliance.

Cooperation in Studies or Surveys

Assurance is hereby made that the offeror will cooperate in any studies or surveys as may be required, submit periodic reports to allow the Government to determine the extent of compliance with the subcontracting plan, submit Standard Form (SF) 294, (Subcontracting Report for Individual Contracts), and/or Standard Form (SF) 295, (Summary Subcontract Report), in accordance with the instructions on the forms, and ensure that its subcontractors agree to submit Standard Forms 294 and 295.

Assurance is hereby made that the offeror will cooperate with the Contracting Officer, and or the SBA, in submission of any additional required reports as may be required or cooperate in any study or surveys to the extent necessary to comply with this plan.

Flowdown of SB/WOSB/SDB Subcontracting Efforts to Other Large Businesses

Certification is hereby given that this offeror will include the clause entitled "Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns" in all subcontracts which offer further subcontracting opportunities, and that the offeror will require all subcontracts with large businesses in excess of \$1,000,000 in the case of a contract for the construction of any public facility, or in excess of \$500,000 in the case of all other contracts, to include a plan similar to the plan agreed to by this offeror.

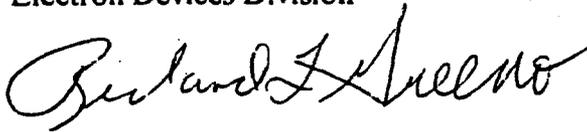
There are no planned procurements in excess of \$500,000. However, if there were, the plans required would be reviewed by comparing them with the provisions of Public Law 95-507, 103-355 and FAR 52.219-9 and assuring that the minimum requirements of a subcontracting plan have been satisfied. The acceptability of percentage goals shall be determined on a case by case basis depending upon the supplies/services involved, the availability of potential small and SDB/WOSB/HBCU/MI sources and prior experience.

In consultation with, and approval of, our Small Business Liaison Officer, internal reports will be issued to periodically monitor the progress of such subcontracting programs.

Make or Buy

Adequate and timely consideration of small business and SDB/WOSB/HBCU/MI concerns will be given in all make or buy decisions.

Litton Systems, Inc.
Electron Devices Division

A handwritten signature in cursive script, appearing to read "Richard L. Greeno".

Richard L. Greeno
Senior Subcontract Administrator
Small Business Liaison Officer

Enclosure
RG:cmast3

ADDENDUM

Add an addendum to the Master Subcontracting Plan in the section titled "Development of Percentage Goals" after the word suppliers, the following paragraph:

"LEDD will establish goals, expressed in terms of percentage of total planned subcontracting dollars for principal types of supplies and services to be subcontracted with LB/SB/SDB/WOSB/HBCU's on a contract by contract basis"

EXHIBIT E

LITTON 'KLYSTRON' WARRANTY

San Carlos, California 94070

SEPTEMBER 1996

K-1

**KLYSTRON TUBE
LIMITED WARRANTY**

Litton Systems, Inc., Litton Electron Devices Division warrants Klystron Tubes to be free from defects in material and workmanship and clear of all liens and encumbrances. Klystron Tubes will conform to Litton's applicable specifications or, if appropriate, to the Customer's specifications, provided that the Customer's specifications are accepted by Litton in writing. Klystron Tubes are warranted for a period of twelve (12) months from the date of shipment from Litton's manufacturing facility or for one thousand (1,000) operating hours, whichever occurs first.

RETURN OF TUBES

In the event that any Klystron Tubes become defective during the warranty period, the Customer shall promptly notify Litton in writing of any claims. A tube which becomes defective during the warranty period must be returned to Litton's manufacturing facility before the tube will be replaced, repaired, or at Litton's option, a credit issued to the Customer. Prior to returning tubes, obtain authorization from Litton. The Customer will provide, in writing, all pertinent information relating to the failure, including the

serial number and number of operating hours with the returned product. Tubes returned to Litton without prior approval, at Litton's option, may not be accepted by Litton and may be returned freight collect to the Customer.

Damage incurred in shipment should be reported to the carrier and a claim filed by the Customer.

The final determination as to the cause of failure and the applicability of this warranty shall be reasonably made by Litton. In the event returned tubes are the Customer's responsibility, the handling of the tube and all costs, including freight and risk of loss, will be at the Customer's expense.

In no event shall Litton be liable for any defective tubes if examination discloses that the defective condition of such tubes was caused by misuse, abuse, improper installation or application, improper maintenance or repair alteration, accident or negligence in use, storage, transportation or handling.

EXCLUSION OF WARRANTIES
THE PRECEDING WARRANTY IS THE ONLY WARRANTY MADE BY LITTON. THERE

IS NO OTHER WARRANTY EXPRESS OR IMPLIED, OR OTHERWISE MADE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

LIMITATION OF REMEDIES

IN THE EVENT OF LITTON'S LIABILITY, WHETHER BASED ON CONTRACT, TORT OR OTHERWISE, CUSTOMER'S EXCLUSIVE REMEDY WILL BE LIMITED TO, AT LITTON'S OPTION, THE REPAIR OR REPLACEMENT OF ANY DEFECTIVE TUBES OR THE REPAYMENT OF THE PORTION OF THE PURCHASE PRICE PAID BY THE CUSTOMER ATTRIBUTABLE TO THE DEFECTIVE TUBES. LITTON WILL NOT BE LIABLE FOR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR OTHERWISE. Any legal action against Litton must be instituted by the Customer within one (1) year after such claim arises, or thereafter all such claims shall be barred notwithstanding any statutory period of limitations to the contrary.

Additional information relating to warranty procedures will be supplied on request.

FERMILAB SUBCONTRACT GENERAL PROVISIONS

1. Definitions	1
2. Covenant Against Contingent Fees	1
3. Sub-subcontracts for Commercial Items and Commercial Components	1
4. Convict Labor	2
5. Federal, State and Local Taxes	2
6. Affirmative Action for Special Disabled and Vietnam Era Veterans	2-4
7. Notice of Labor Disputes	4
8. Utilization of Small, Small Disadvantaged and Women-Owned Small Business Concerns	4
9. Assignment	4
10. Audit and Records	4-5
11. Equal Opportunity	5-6
12. Applicable Law	6
13. Affirmative Action for Handicapped Workers	6
14. Modification Proposals – Price Breakdown	6
15. Restrictions on Certain Foreign Purchases	6-7
16. Clean Air and Water	7
17. Fermilab-Furnished Property	7-9
18. Independent Contractor	9
19. Certified Cost or Pricing Data	9-10
20. Restrictions on Sub-subcontractor Sales to the Government	10
21. Anti-Kickback Procedures	10
22. Contract Work Hours and Safety Standards Act – Overtime Compensation – General	10-11
23. Preference for U.S. Flag Air Carriers	11
24. Limitations on Subcontracting	11
25. Preference for Privately Owned U.S. Flag Commercial Vessels	12
26. Protecting Fermilab and the Government's Interest When Sub-subcontracting with Sub-subcontractors Debarred, Suspended, or Proposed for Debarment	12
27. Controlled Substances (Drug-Free Workplace)	12
28. Printing	13
29. Notification of Ownership Changes	13

1. DEFINITIONS

1.1 As used throughout this subcontract, the following terms shall have the meanings set forth below:

- (a) The term "Government" shall mean the Government of the United States acting through the United States Department of Energy or its successor.
- (b) The term "Department" shall mean the United States Department of Energy or any duly authorized representative thereof.
- (c) The term "Fermilab" shall mean Universities Research Association, Inc., a not-for-profit corporation organized under the laws of the District of Columbia, or any duly authorized representative thereof.
- (d) Except as otherwise provided in this subcontract, the term "sub-subcontracts" includes purchase orders under this subcontract.
- (e) "Manager" shall mean the person in charge of business services for Fermilab or his written designee.

2. COVENANT AGAINST CONTINGENT FEES

2.1 (a) The Subcontractor warrants that no person or agency has been employed or retained to solicit or obtain this subcontract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty Fermilab shall have the right to annul this subcontract without liability or, in its discretion to deduct from the subcontract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter. For purposes of this clause, the term "Government" includes "Fermilab."

3. SUB-SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS

3.1 As used in this clause, the terms "commercial component," "commercial item," and "nondevelopmental items" shall have the meanings set forth in the clause at Federal Acquisition Regulation (FAR) 52.202-1, Definitions.

3.2 To the maximum extent practicable, the Subcontractor shall incorporate, and shall require its sub-subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this subcontract.

3.3 Except to the extent required elsewhere in this subcontract or where necessary to establish the reasonableness of prices under FAR Subpart 15, the Subcontractor is not required to include any provisions other than clauses 6, 11, and 13 of this subcontract in any sub-subcontract at any tier for commercial items or nondevelopmental items that would be incorporated as components of items to be supplied under this subcontract.

3.4 The Subcontractor shall include the terms of this clause, including this paragraph 3.4, in all sub-subcontracts awarded under this subcontract.

6.2 GENERAL.

- (a) Regarding any position for which the employee or applicant for employment is qualified, the Subcontractor shall not discriminate against the individual because the individual is a special disabled or Vietnam Era veteran. The Subcontractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified special disabled and Vietnam Era veterans without discrimination based upon their disability or veterans' status in all employment practices such as -
 - (i) Employment;
 - (ii) Upgrading;
 - (iii) Demotion or transfer;
 - (iv) Recruitment;
 - (v) Advertising;
 - (vi) Layoff or termination;
 - (vii) Rates of pay or other forms of compensation; and
 - (viii) Selection for training, including apprenticeship.
- (b) The Subcontractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

6.3 LISTING OPENINGS.

- (a) The Subcontractor agrees to list all suitable employment openings existing at subcontract award or occurring during subcontract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Subcontractor facility, including one not connected with performing this subcontract. An independent corporate affiliate is exempt from this requirement.
- (b) State and local government agencies holding subcontracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service.
- (c) The listing of suitable employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Subcontractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.
- (d) Whenever the Subcontractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Subcontractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent subcontracts. The Subcontractor may advise the State system when it is no longer bound by this subcontract clause.
- (e) Under the most compelling circumstances, an employment opening may not be suitable for listing, including situations when (i) Fermilab's needs cannot reasonably be supplied, (ii) listing would be contrary to national security, or (iii) the requirement of listing would not be in the Government's interest.

6.4 APPLICABILITY.

- (a) This clause does not apply to the listing of employment openings which occur and are filled outside the 50 states, the District of Columbia, Puerto Rico, Guam, Virgin Islands, American Samoa, and the Trust Territory of the Pacific Islands.
- (b) The terms of paragraph 6.3(a) above of this clause do not apply to openings that the Subcontractor proposes to fill from within its own organization or under a customary and traditional employer-union hiring arrangement. This exclusion does not apply to a particular opening once an employer decides to consider applicants outside of its own organization or employer-union arrangement for that opening.

6.5 POSTINGS.

- (a) The Subcontractor agrees to post employment notices stating (i) the Subcontractor's obligation under the law to take affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.
- (b) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Director, Office of Federal Contract Compliance Programs, Department of Labor (Director), and provided by or through Fermilab.
- (c) The Subcontractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other subcontract understanding, that the Subcontractor is bound by the terms of the Act, and is committed to take affirmative action to employ, and advance in employment, qualified special disabled and Vietnam Era veterans.

6.6 NONCOMPLIANCE. If the Subcontractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

6.7 SUB-SUBCONTRACTS. The Subcontractor shall include the terms of this clause in every sub-subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations or orders of the Secretary. The Subcontractor shall act as specified by the Director to enforce the terms, including action for noncompliance.

6.8 EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA.

- (a) The Subcontractor shall report at least annually, as required by the Secretary of Labor, on:
 - (i) The number of special disabled veterans and the number of veterans of the Vietnam era in the workplace of the Subcontractor by job category and hiring location; and
 - (ii) The total number of new employees hired during the period covered by the report, and of that total, the number of special disabled veterans, and the number of veterans of the Vietnam era.
- (b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."
- (c) Reports shall be submitted no later than March 31 of each year beginning March 31, 1988.

10.3 EXAMINATION OF COSTS. If this is a cost-reimbursement, incentive, time-and-materials, labor-hour, or price redeterminable subcontract, or any combination of these, the Subcontractor shall maintain and Fermilab, or an authorized representative of Fermilab, shall have the right to examine and audit all records and other evidence sufficient to reflect properly all costs claimed to have been incurred or anticipated to be incurred directly or indirectly in performance of this subcontract. This right of examination shall include inspection at all reasonable times of the Subcontractor's plants, or parts of them, engaged in performing the subcontract.

10.4 COST OR PRICING DATA. If the Subcontractor has been required to submit cost or pricing data in connection with any pricing action relating to this subcontract, Fermilab, or an authorized representative of Fermilab, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Subcontractor's records, including computations and projections, related to -

- (1) The proposal for the subcontract, sub-subcontract, or modification;
- (2) The discussions conducted on the proposal(s), including those related to negotiating;
- (3) Pricing of the subcontract, sub-subcontract, or modification; or
- (4) Performance of the subcontract, sub-subcontract or modification.

10.5 COMPTROLLER GENERAL - (a) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Subcontractor's directly pertinent records involving transactions related to this subcontract or a sub-subcontract hereunder. (b) This paragraph may not be construed to require the Subcontractor or sub-subcontractor to create or maintain any record that the Subcontractor or sub-subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.

10.6 REPORTS. If the Subcontractor is required to furnish cost, funding, or performance reports, Fermilab or an authorized representative of Fermilab shall have the right to examine and audit the supporting records and materials, for the purpose of evaluating (a) the effectiveness of the Subcontractor's policies and procedures to produce data compatible with the objective of these reports and (b) the data reported.

10.7 AVAILABILITY. The Subcontractor shall make available at its office at all reasonable times the records, materials, and other evidence described in paragraphs 10.2 through 10.6 of this clause, for examination, audit, or reproduction, until 3 years after final payment under this subcontract or for any shorter period specified in Subpart 4.7, Contractor Records Retention, of the Federal Acquisition Regulation (FAR), or for any longer period required by statute or by other clauses of this subcontract. In addition -

- (a) If this subcontract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement; and
- (b) Records relating to litigation or the settlement of claims arising under or relating to this subcontract shall be made available until such litigation or claims are finally resolved.

10.8 The Subcontractor shall insert a clause containing all the terms of this clause, including this paragraph 10.8, in all sub-subcontracts under this subcontract that exceed \$100,000, and -

- (a) That are cost-reimbursement, incentive, time-and-materials, labor-hour, or price-redeterminable type or any combination of these;
- (b) For which cost or pricing data are required; or
- (c) That require the sub-subcontractor to furnish reports as discussed in paragraph 10.6 of this clause.

The clause may be altered only as necessary to identify properly the contracting parties.

11. EQUAL OPPORTUNITY

11.1 If, during any 12-month period (including the 12 months preceding the award of this subcontract), the Subcontractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Subcontractor shall comply with subparagraphs 11.2 (a) thru (k) below. Upon request, the Subcontractor shall provide information necessary to determine the applicability of this clause.

11.2 During the performance of this subcontract, the Subcontractor agrees as follows:

- (a) The Subcontractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
- (b) The Subcontractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to:
 - (i) Employment
 - (ii) Upgrading;
 - (iii) Demotion;
 - (iv) Transfer;
 - (v) Recruitment or recruitment advertising;
 - (vi) Layoff or termination;
 - (vii) Rates of pay or other forms of compensation; and
 - (viii) Selection for training, including apprenticeship.
- (c) The Subcontractor shall post in conspicuous places available to employees and applicants for employment notices to be provided by Fermilab that explain this clause.
- (d) The Subcontractor shall, in all solicitations or advertisement for employees placed by or on behalf of the Subcontractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
- (e) The Subcontractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, the notice, to be provided by Fermilab, advising the labor union or workers representative of the Subcontractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Subcontractor shall comply with Executive Order No. 11246 as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Subcontractor shall furnish to Fermilab all information required by Executive Order No. 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. Standard Form 100 (EEO-1), or any successor form, is the prescribed form to be filed within 30 days following the award, unless filed within 12 months preceding the date of award.

15.3 The Subcontractor agrees to insert the provisions of this clause, including this paragraph 15.3, in all sub-subcontracts hereunder.

16. CLEAN AIR AND WATER

(applicable to all construction subcontracts, and to all other subcontracts which exceed \$100,000)

16.1 DEFINITIONS AS USED IN THIS CLAUSE:

- (a) "Air Act" means the Clean Air Act (42 U.S.C. 7401 et seq.).
- (b) "Clean Air Standards" means,
 - (1) Any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, work practices, or other requirements contained in, issued under, or otherwise adopted under the Air Act or Executive Order 11738.
 - (2) An applicable implementation plan as described in section 110(d) of the Air Act (42 U.S.C. 7410(d));
 - (3) An approved implementation procedure or plan under section 111(c) or section 111(d) of the Air Act (42 U.S.C. 7411(c) or (d)); or
 - (4) An approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 7412(d)).
- (c) "Clean water standards," means any enforceable limitation, control, condition, prohibition, standard, or other requirement promulgated under the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by local government to ensure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. 1317).
- (d) "Compliance," means compliance with:
 - (1) Clean air or water standards; or
 - (2) A schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency, or an air or water pollution control agency under the requirements of the Air Act or Water Act and related regulations.
- (e) "Facility," means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a Subcontractor or sub-subcontractor, used in the performance of a subcontract or sub-subcontract. When a location or site of operations includes more than one building, plant, installation or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.
- (f) "Water Act," means Clean Water Act (33 U.S.C. 1251 et seq.).

16.2 THE SUBCONTRACTOR AGREES:

- (a) To comply with all the requirements of section 114 of the Clean Air Act (42 U.S.C. 7414) and section 308 of the Clean Water Act (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, and all regulations and guidelines issued to implement those acts before the award of this subcontract;

- (b) That no portion of the work required by this subcontract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when this subcontract was awarded unless and until the EPA eliminates the name of the facility from the listing;
- (c) To use best efforts to comply with clean air standards and clean water standards at the facility in which the subcontract is being performed; and
- (d) To insert the substance of this clause into any nonexempt subcontract, including this subparagraph 16.2(d).

17. FERMILAB-FURNISHED PROPERTY

17.1 FERMILAB PROPERTY.

- (a) Fermilab shall deliver to the Subcontractor, for use in connection with and under the terms of this subcontract, the Fermilab-furnished property described elsewhere in the subcontract together with any related data and information that the Subcontractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Fermilab-furnished property").
- (b) The delivery or performance dates for this subcontract are based upon the expectation that Fermilab-furnished property suitable for use (except for property furnished "as-is") will be delivered to the Subcontractor at the times stated elsewhere in the subcontract or, if not so stated, in sufficient time to enable the Subcontractor to meet the subcontract's delivery or performance dates.
- (c) If Fermilab-furnished property is received by the Subcontractor in a condition not suitable for the intended use, the Subcontractor shall, upon receipt of it, notify Fermilab, detailing the facts, and, as directed by Fermilab and at Fermilab expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Subcontractor, Fermilab shall make an equitable adjustment as provided in paragraph 17.8 of this clause.
- (d) If Fermilab-furnished property is not delivered to the Subcontractor by the required time, Fermilab shall, upon the Subcontractor's timely written request, make a determination of the delay, if any, caused the Subcontractor and shall make an equitable adjustment in accordance with paragraph 17.8 of this clause.

17.2 CHANGES IN FERMILAB-FURNISHED PROPERTY.

- (a) Fermilab may, by written notice,
 - (i) decrease the Fermilab-furnished property provided or to be provided under this subcontract, or
 - (ii) substitute other Fermilab-furnished property for the property to be provided by Fermilab, or to be acquired by the Subcontractor for Fermilab, under this subcontract. The Subcontractor shall promptly take such action as Fermilab may direct regarding the removal, shipment, or disposal of the property covered by such notice.
- (b) Upon the Subcontractor's written request, Fermilab shall make an equitable adjustment to the subcontract in accordance with paragraph 17.8 of this clause, if Fermilab has agreed in the subcontract to make the property available for performing this subcontract and there is any -
 - (i) Decrease or substitution in this property pursuant to subparagraph 17.2(a) above; or

17.11 COMMUNICATIONS. All communications under this clause shall be in writing.

18. INDEPENDENT CONTRACTOR

In all respects pertaining to this subcontract the Subcontractor is, and shall act as an independent Subcontractor and the Subcontractor shall not be or act as the agent, employee or servant of Fermilab or the Government.

Without limiting the generality of the foregoing it is understood and agreed:

- (1) that all persons employed by the Subcontractor in the performance of this agreement shall be employees of the Subcontractor and not employees of Fermilab or the Government, and
- (2) that the Subcontractor shall not enter into any contract with a third party which purports to obligate or bind Fermilab or the Government.

19. CERTIFIED COST OR PRICING DATA

19.1 (a) The Subcontractor shall require under the situations described in (b) below, unless exempted under the exceptions set forth in (c) below, each sub-subcontractor under this subcontract to submit cost or pricing data and to certify that, to the best of his knowledge and belief, such cost or pricing data are accurate, complete, and current.

(b) Except as provided in (c) below, certified cost or pricing data shall be submitted prior to

- (i) the award of each sub-subcontract, the price of which is expected to exceed \$500,000 and
- (ii) the negotiation of the price of each change or modification to a sub-subcontract under this subcontract for which the price adjustment is expected to exceed \$500,000.

(c) Certified cost or pricing data need not be furnished pursuant to this paragraph (c) where:

- (i) the Subcontractor has not been required to furnish cost or pricing data; or
- (ii) the price adjustment is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or the prices are set by law or regulation; and the Subcontractor states in writing the basis for applying this exception.

(d) In submitting the cost or pricing data, the sub-subcontractor shall use the form of certificate set forth in paragraph 19.2 below and shall certify that the data are accurate, complete, and current. Such certificate and data (actual or identified, as provided in the certificate prescribed below) shall be submitted by sub-subcontractors to the next higher-tier sub-subcontractor, or the Subcontractor, as applicable, for retention.

19.2 The certificates required by this clause shall be in the form set forth below:

SUBCONTRACTOR'S CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that, to the best of my knowledge and belief, cost or pricing data submitted in writing, or specifically identified in writing if actual submission of the data is impracticable (see FAR

15.804-6(d)), to Fermilab in support of _____*

are accurate, complete, and current as of _____**
(date)

FIRM _____

NAME _____

TITLE _____

DATE OF EXECUTION*** _____

* Identify the proposal, quotation, request for price adjustment, or other submission involved.

** Insert the day, month, and year when price agreement was reached.

*** Insert the day, month, and year when price negotiations were concluded and price agreement was reached or, if applicable, another date agreed upon between the parties that is as close as practicable to the date of agreement on price.

19.3 For purposes of verifying that certified cost or pricing data submitted in conjunction with the negotiation of this subcontract or any subcontract change or other modification which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$500,000 were accurate, complete, and current, Fermilab, the Department or any of its authorized representatives shall until the expiration of three (3) years from the date of final payment under this subcontract, have the right to examine those books, records, documents, papers, and other supporting data which involve transactions related to this subcontract or which will permit adequate evaluation of the cost or pricing data submitted, along with the computations and projections used therein.

19.4 Whenever the price of any change or other modification to this subcontract involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$500,000, the Subcontractor agrees to furnish Fermilab certified cost or pricing data, using the certificate set forth in paragraph 19.2 above unless the price is based on adequate price competition, established catalog or market prices of commercial items sold in substantial quantities to the general public, or prices set by law or regulation.

19.5 The requirement for submission of certified cost or pricing data with respect to any change or other modification does not apply to any sub-subcontract change or other modification, at any tier, where the subcontract is firm fixed-price or fixed-price with escalation unless such change or other modification results from a change or modification to the subcontract, nor does it apply to a sub-subcontract change or modification, at any tier, where the subcontract is not firm fixed-price or fixed-price with escalation, unless the price for such change or other modification becomes reimbursable under the subcontract.

19.6 The Subcontractor agrees to insert paragraph 19.3 without change and the substance of paragraphs 19.1, 19.2, 19.4, 19.5, and 19.6 of this clause in each sub-subcontract hereunder in excess of \$500,000 and in each sub-subcontract of \$500,000 or less at the time of making a change or other modification thereto which involves aggregate increases and/or decreases in costs plus applicable profits expected to exceed \$500,000.

19.7 If Fermilab determines that any price, including profit or fee, negotiated in connection with this subcontract or any cost reimbursable under this subcontract was increased by any significant sums because the Subcontractor, or any sub-subcontractor pursuant to this clause or any sub-subcontract clause herein required, furnished incomplete or inaccurate cost or pricing data or data not current as certified in the Subcontractor's certificate of current cost or pricing data, then such price or cost shall be reduced accordingly and the subcontract shall be modified in writing to reflect such reduction.

22.3 VIOLATION, LIABILITY FOR UNPAID WAGES, AND LIQUIDATED DAMAGES. In the event of any violation of the provisions set forth in paragraph 22.2 of this clause, the Subcontractor and any sub-subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Subcontractor and sub-subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic employed in violation of the provisions set forth in paragraph 22.2 of this clause in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provision set forth in paragraph 22.2 of this clause.

22.4 WITHHOLDING FOR UNPAID WAGES AND LIQUIDATED DAMAGES. Fermilab shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Subcontractor or sub-subcontractor under any such subcontract or any other Federal contract with the same Subcontractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same Subcontractor, such sums as may be determined to be necessary to satisfy any liabilities of such Subcontractor or sub-subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in paragraph 22.3 of this clause.

22.5 PAYROLLS AND BASIC RECORDS.

- (a) The Subcontractor and sub-subcontractor shall maintain payrolls and basic payroll records during the course of subcontract work and shall preserve them for a period of 3 years from the completion of the subcontract for all laborers and mechanics working on the subcontract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Nothing in this paragraph shall require the duplication of records required to be maintained for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis-Bacon Act.
- (b) The records to be maintained under paragraph 22.5(a) of this clause shall be made available by the Subcontractor or sub-subcontractor for inspection, copying, or transcription by authorized representatives of Fermilab or the Department of Labor. The Subcontractor or sub-subcontractor shall permit such representatives to interview employees during working hours on the job.

22.6 SUB-SUBCONTRACTS. The Subcontractor or sub-subcontractor shall insert in any sub-subcontracts exceeding \$100,000 the provisions set forth in paragraphs 22.2 through 22.6 of this clause and also a clause requiring the sub-subcontractors to include these provisions in any lower tier sub-subcontracts exceeding \$100,000. Fermilab shall be responsible for compliance by any sub-subcontractor or lower tier sub-subcontractor with the provisions set forth in paragraphs 22.2 through 22.6 of this clause.

23. PREFERENCE FOR U.S. FLAG AIR CARRIERS

23.1 "International air transportation," as used in this clause, means transportation by air between a place in the United States and a place outside the United States or between two places both of which are outside the United States.

"United States," as used in this clause, means the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, and possessions of the United States.

"U.S. Flag air carrier," as used in this clause, means an air carrier holding a certificate under section 401 of the Federal Aviation Act of 1958 (49 U.S.C. 1371).

23.2 Section 5 of the International Air Transportation Fare Competitive Practices Act of 1974 (49 U.S.C. 1571) (Fly America Act) requires that all Federal agencies and Government contractors and Subcontractors use U.S. flag air carriers for U.S. Government-financed international air transportation of personnel (and their personal effects) or property, to the extent that service by those carriers is available. It requires the Comptroller General of the United States, in the absence of satisfactory proof of the necessity for foreign-flag air transportation, to disallow expenditures from funds, appropriated or otherwise established for the account of the United States, for international air transportation secured aboard a foreign-flag air carrier if a U.S. flag air carrier is available to provide such services.

23.3 The Subcontractor agrees, in performing work under this subcontract, to use U.S. flag air carriers for international air transportation of personnel (and their personal effects) or property to the extent that service by those carriers is available.

23.4 In the event that the Subcontractor selects a carrier other than a U.S. flag air carrier for international air transportation, the Subcontractor shall include a certification on vouchers involving such transportation essentially as follows:

**CERTIFICATION OF UNAVAILABILITY OF
U.S. FLAG AIR CARRIERS**

I hereby certify that international air transportation of persons (and their personal effects) or property by U.S. flag air carrier was not available or it was necessary to use foreign-flag air carrier service for the following reasons (see section 47.403 of the Federal Acquisition Regulation):

(State reasons): _____
(End of Certification)

23.5 The Subcontractor shall include the substance of this Paragraph, including this subparagraph 23.5, in each sub-subcontract or purchase order under this subcontract that may involve international air transportation.

24. LIMITATIONS ON SUBCONTRACTING

24.1 This clause applies if this subcontract was awarded as a result of a partial or total set aside for small business.

24.2 By submission of an offer and execution of a subcontract, the Offeror/Subcontractor agrees that in performance of the subcontract in the case of a subcontract for:

- (a) Services (except construction). At least 50 percent of the cost of subcontract performance incurred for personnel shall be expended for employees of the concern.
- (b) Supplies (other than procurement from a regular dealer in such supplies). The concern shall perform work for at least 50 percent of the cost of manufacturing the supplies, not including the cost of materials.
- (c) General construction. The concern will perform at least 15 percent of the cost of the subcontract, not including the cost of materials with its own employees.
- (d) Construction by special trade contractors. The concern will perform at least 25 percent of the cost of the subcontract, not including the cost of materials with its own employees.

28. PRINTING

28.1 To the extent that duplicating or printing services may be required in the performance of this subcontract, the Subcontractor shall provide or secure such services in accordance with the Government Printing and Binding Regulations, Title 44 of the U.S. Code, and DOE Directives relative thereto.

28.2 The term "Printing" includes the following processes: composition, platemaking, presswork, binding, microform publishing, or the end items produced by such processes. Provided, however, that performance of a requirement under this subcontract involving the duplication of less than 5,000 copies of a single page, or no more than 25,000 units in the aggregate of multiple pages, will not be deemed to be printing.

28.3 Printing services not obtained in compliance with this guidance shall result in the cost of such printing being disallowed or a reduction in the subcontract price by an amount equalling the cost of the printing to the Subcontractor.

28.4 In all sub-subcontracts hereunder which require printing (as that term is defined in Title I of the U.S. Government Printing and Binding Regulations and subsection 28.2), the Subcontractor shall include a provision substantially the same as this clause.

29. NOTIFICATION OF OWNERSHIP CHANGES

29.1 This clause applies (1) if certified cost or pricing data was submitted by the Subcontractor in connection with the award of this subcontract, or (2) if the Subcontractor furnishes certified cost or pricing data under paragraph 19.4 of the clause entitled "Certified Cost or Pricing Data" in connection with a change or other modification to this subcontract.

29.2 The Subcontractor shall make the following notifications in writing:

- (a) When the Subcontractor becomes aware that a change in its ownership has occurred, or is certain to occur, which could result in changes in the valuation of its capitalized assets in the accounting records, the Subcontractor shall notify Fermilab within 30 days.
- (b) The Subcontractor shall also notify Fermilab within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

29.3 The Subcontractor shall: (1) maintain current, accurate, and complete inventory records of assets and their costs; (2) provide Fermilab or designated representative ready access to the records upon request; (3) ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Subcontractor's ownership changes; and (4) retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Subcontractor ownership change.

29.4 The Subcontractor shall include the substance of this clause in all sub-subcontracts under this subcontract which meet the applicability requirement of FAR 15.804-8(g).

FL-100B

INTELLECTUAL PROPERTY CLAUSES FOR CONSTRUCTION SUBCONTRACTS; "NON-STANDARD" ITEM SUPPLY SUBCONTRACTS; AND NON-R&D SERVICE SUBCONTRACTS WHERE TECHNICAL DATA ARE EXPECTED TO BE FIRST PRODUCED OR SPECIFIED AS DELIVERABLES

CONTENTS

1. Rights in Data - General
2. Additional Data Requirements
3. Authorization and Consent
4. Patent Indemnity
5. Notice and Assistance Regarding Patent and Copyright Infringement
6. Refund of Royalties

1. **RIGHTS IN DATA - GENERAL** (June 1987) (48 C.F.R. 52.227-14 with Alternates I and V, as supplemented for DOE per AL-87-5 dated September 4, 1987)

- (a) *Definitions.* "Computer software," as used in this clause, means computer programs, computer data bases, and documentation thereof.

"Data," as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to contract administration, such as financial, administrative, cost or pricing, or management information.

"Form, fit, and function data," as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, as well as data identifying source, size, configuration, mating, and attachment characteristics, functional characteristics, and performance requirements; except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formula, and flow charts of the software.

"Limited rights data," as used in this clause, means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged.

"Technical data," as used in this clause, means data (other than computer software) which are of a scientific or technical nature.

"Restricted computer software," as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and is confidential or privileged; or is published copyrighted computer software; including minor modifications of such computer software.

"Unlimited rights," as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose, and to have or permit others to do so.

"Limited rights," as used in this clause, means the rights of the Government in limited rights data as set forth in the Limited Rights Notice of subparagraph (g)(2) if included in this clause.

"Restricted rights," as used in this clause, means the rights of the Government in restricted computer software, as set forth in a Restricted Rights Notice of subparagraph (g)(3) if included in this clause, or as otherwise may be provided in a collateral agreement incorporated in and made part of this subcontract, including minor modifications of such computer software.

- (b) *Allocation of Rights.*

- (1) Except as provided in paragraph (c) below regarding copyright, the Government shall have unlimited rights in:

- (2) The Subcontractor agrees that to the extent it receives or is given access to data necessary for the performance of this subcontract which contain restrictive markings, the subcontractor shall treat the data in accordance with such markings unless otherwise specifically authorized in writing by the DOE via URA.
- (3) The Subcontractor agrees not to establish claim to copyright in computer software first produced in the performance of this subcontract without prior written permission of the DOE via URA. When such permission is granted, the DOE shall specify appropriate terms to assure dissemination of the software. The Subcontractor shall promptly deliver to the DOE or to the Patent Counsel designated by the DOE a duly executed and approved instrument fully confirmatory of all rights to which the Government is entitled, and other terms pertaining to the computer software to which claim to copyright is made.

(e) *Unauthorized Marking of Data.*

- (1) Notwithstanding any other provisions of this subcontract concerning inspection or acceptance, if any data delivered under this subcontract are marked with the notices specified in subparagraphs (g)(2) or (g)(3) below and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this subcontract, the DOE may at any time either return the data to the Subcontractor, or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.
 - (i) The DOE shall make written inquiry to the Subcontractor affording the Subcontractor 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;
 - (ii) If the Subcontractor fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the DOE for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.
 - (iii) If the Subcontractor provides written justification to substantiate the propriety of the markings within the period set in subdivision (i) above, the DOE shall consider such written justification and determine whether or not the markings are to be canceled or ignored. If the DOE determines that the markings are authorized, the Subcontractor shall be so notified in writing. If the DOE determines that the markings are not authorized, the DOE shall furnish the Subcontractor a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Subcontractor files suit in a court of competent jurisdiction within 90 days of receipt of the DOE's decision. The Government shall continue to abide by the markings under this subdivision (iii) until final resolution of the matter either by the DOE's determination becoming final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.
- (2) The time limits in the procedures set forth in subparagraph (1) above may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.
- (3) This paragraph (e) does not apply if this subcontract is for a major system or for support of a major system by a civilian agency other than NASA and the U.S. Coast Guard subject to the provisions of Title III of the Federal Property and Administrative Services Act of 1949.
- (4) Except to the extent the Government's action occurs as the result of final disposition of the matter by a court of competent jurisdiction, the Subcontractor is not precluded by this paragraph (e) from bringing a claim under the Contract Disputes Act, including pursuant to the Disputes clause of this subcontract, as applicable, that may arise as the result of the Government removing or ignoring authorized markings on data delivered under this subcontract.

(f) *Omitted or Incorrect Markings.*

- (1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) below, or the copyright notice required by paragraph (c) above, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Subcontractor may request, within 6 months (or a longer time approved by the DOE for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Subcontractor's expense, and the DOE may agree to do so if the Subcontractor:

- (d) The DOE may release the Subcontractor from the requirements of this clause for specifically identified data items at any time during the 3-year period set forth in paragraph (a) of this clause.

3. AUTHORIZATION AND CONSENT (48 C.F.R. 52.227-1)

- (a) The Government authorizes and consents to all use and manufacture, in performing this subcontract or any lower-tier sub-subcontract, of any invention described in and covered by a United States patent (1) embodied in the structure or composition of any article the delivery of which is accepted by the Government or Fermilab under this subcontract or (2) used in machinery, tools, or methods whose use necessarily results from compliance by the Subcontractor or any lower-tier sub-subcontractor with (i) specifications or written provisions forming a part of this subcontract or (ii) specific written instructions given by Fermilab or the Department Contracting Officer directing the manner of performance. The entire liability to the Government for infringement of a patent of the United States shall be determined solely by the provisions of the indemnity clause, if any, included in this subcontract or any lower-tier sub-subcontract hereunder, and the Government assumes liability for all other infringement to the extent of the authorization and consent hereinabove granted.
- (b) The Subcontractor agrees to include, and require inclusion of, this clause, suitably modified to identify the parties, in all lower-tier sub-subcontracts for supplies or services (including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services expected to exceed the simplified acquisition threshold at Federal Acquisition Regulation (FAR) 2.101); however, omission of this clause from any lower-tier sub-subcontract, including those at or below the simplified acquisition threshold, does not affect this authorization and consent.

4. PATENT INDEMNITY (48 C.F.R. 52.227-3)

- (a) The Subcontractor shall indemnify Fermilab, the Government, and their officers, agents, and employees against liability, including costs, for infringement of any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of the manufacture or delivery of supplies, the performance of services, or the construction, alteration, modification, or repair of real property (hereinafter referred to as "construction work") under this subcontract, or out of the use or disposal by or for the account of the Government or Fermilab of such supplies or construction work.
- (b) This indemnity shall not apply unless the Subcontractor shall have been informed as soon as practicable by the Government or Fermilab of the suit or action alleging such infringement and shall have been given such opportunity as is afforded by applicable laws, rules, or regulations to participate in its defense. Further, this indemnity shall not apply to (1) an infringement resulting from compliance with specific written instructions of Fermilab or the Department Contracting Officer directing a change in the supplies to be delivered or in the materials or equipment to be used, or directing a manner of performance of the subcontract not normally used by the Subcontractor, (2) an infringement resulting from addition to or change in supplies or components furnished or construction work performed that was made subsequent to delivery or performance, or (3) a claimed infringement that is unreasonably settled without the consent of the Subcontractor, unless required by final decree of a court of competent jurisdiction.

5. NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (48 C.F.R. 52.227-2)

- (a) The Subcontractor shall report to the Department Contracting Officer through Fermilab promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this subcontract of which the Subcontractor has knowledge.
- (b) In the event of any claim or suit against Fermilab or the Government on account of any patent or copyright infringement arising out of the performance of this subcontract or out of the use of any supplies furnished or work or services performed under this subcontract, the Subcontractor shall furnish to Fermilab or the Government, when requested by Fermilab or the Department Contracting Officer, all evidence and information in possession of the Subcontractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Subcontractor has agreed to indemnify the Government or Fermilab.
- (c) The Subcontractor agrees to include, and require inclusion of, this clause in all lower-tier sub-subcontracts for supplies or services (including construction and architect-engineer sub-subcontracts and those for material,

LIMITATION ON PAYMENTS TO INFLUENCE
CERTAIN FEDERAL TRANSACTIONS

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Contractor," as used in this clause, means the first tier subcontractor in privity of contract with URA-Fermilab.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization" as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if charged, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, included the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under Title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), Title 37, United States Code.
- (3) A special Government employee, as defined in section 202, Title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, Appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Prime Contractor," as used in this clause, means URA-Fermilab.

- (A) The prohibitions on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities nor directly related to a covered Federal action.
 - (B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.
 - (C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:
 - (1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities;
 - (2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.
 - (D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action:
 - (1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;
 - (2) Technical discussions regarding the preparation of any unsolicited proposal prior to its official submission; and
 - (3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub.L. 95-507, and subsequent amendments.
 - (E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.
- (ii) Professional and technical services.
- (A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of -
 - (1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.
 - (2) Any reasonable payment to a person other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or

- (B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes -
- (1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
 - (2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
 - (3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
- (C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person which requests or received any subcontract exceeding \$100,000 under the Federal contract.
- (D) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the Prime Contractor. The Prime Contractor shall submit all disclosures to the Department of Energy at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.
- (iv) Agreement. The Contractor agrees not to make any payment prohibited by the clause.
- (v) Penalties.
- (A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent Fermilab from seeking any other remedy that may be applicable.
 - (B) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.
- (vi) Cost allowability. Nothing in this clause makes allowable or reasonable any cost which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

FERMILAB FIXED PRICE SUPPLY SUBCONTRACT TERMS & CONDITIONS

1. Changes	1
2. Reports & Records	1
3. Payment	1
4. Inspection of Supplies	1-2
5. Warranty	2
6. Responsibility for Supplies	2
7. Termination for Convenience of Fermilab	2-4
8. Default	4
9. Reserved	4
10. Buy American Act – Supplies	4-5
11. Walsh-Healey Public Contracts Act	5
12. Restrictive Legends	5
13. Permits	5
14. Environmental Protection	5
15. Extras	5

1. CHANGES

1.1 Fermilab may at any time, by a written order, and without notice to the sureties, if any, make changes within the general scope of this subcontract in any one or more of the following:

- (a) drawings, designs or specifications when the supplies to be furnished are to be specially manufactured for Fermilab in accordance with the drawings, designs or specifications.
- (b) method of shipment or packing.
- (c) place of delivery.

1.2 If any such change causes an increase or decrease in the cost of, or the time required for, the performance of any part of the work under this subcontract, whether or not changed by the order, Fermilab shall make an equitable adjustment in the subcontract price, the delivery schedule, or both, and shall modify the subcontract.

1.3 The Subcontractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if Fermilab decides that the facts justify it, Fermilab may receive and act upon a proposal submitted before final payment of the subcontract.

1.4 If the Subcontractor's proposal includes the cost of property made obsolete or excess by the change, Fermilab shall have the right to prescribe the manner of the disposition of the property.

2. REPORTS AND RECORDS

2.1 The Subcontractor shall make such reports to Fermilab and maintain such records with respect to the Subcontractor's activities under this subcontract as Fermilab may require from time to time.

3. PAYMENT

Payment will be made after acceptance by Fermilab and receipt of a proper invoice. Discount time will be computed from date of delivery at place of acceptance or from receipt of proper invoice at the office specified by Fermilab, whichever is later. Payment is made, for discount purposes, when check is mailed.

4. INSPECTION OF SUPPLIES

4.1 Definition. "Supplies," as used in this clause, includes but is not limited to raw materials, components, intermediate assemblies, end products, and lots of supplies.

4.2 The Subcontractor shall provide and maintain an inspection system acceptable to Fermilab covering supplies under this subcontract and shall tender to Fermilab for acceptance only supplies that have been inspected in accordance with the inspection system and have been found by the Subcontractor to be in conformity with subcontract requirements. As part of the system, the Subcontractor shall prepare records evidencing all inspections made under the system and the outcome. These records shall be kept complete and made available to Fermilab during subcontract performance and for as long afterwards as the subcontract requires. Fermilab may perform reviews and evaluations as reasonably necessary to ascertain compliance with this paragraph. These reviews and evaluations shall be conducted in a manner that will not unduly delay the subcontract work. The right of review, whether exercised or not, does not relieve the Subcontractor of the obligations under the subcontract.

4.3 Fermilab has the right to inspect and test all supplies called for by the subcontract, to the extent practicable, at all places and times, including the period of manufacture, and in any event before acceptance. Fermilab shall perform inspections and tests in a manner that will not unduly delay the work. Fermilab assumes no contractual obligation to perform any inspection and test for the benefit of the Subcontractor unless specifically set forth elsewhere in this subcontract.

4.4 If Fermilab performs inspection or test on the premises of the Subcontractor or a sub-subcontractor, the Subcontractor shall furnish, and shall require sub-subcontractors to furnish, at no increase in subcontract price, all reasonable facilities and assistance for the safe and convenient performance of these duties. Except as otherwise provided in the subcontract, Fermilab shall bear the expense of Fermilab inspections or tests made at other than the Subcontractor's or sub-subcontractor's premises; *provided*, that in case of rejection, Fermilab shall not be liable for any reduction in the value of inspection or test samples.

4.5 (a) When supplies are not ready at the time specified by the Subcontractor for inspection or test, Fermilab may charge to the Subcontractor the additional cost of inspection or test.

(b) Fermilab may also charge the Subcontractor for any additional cost of inspection or test when prior rejection makes reinspection or retest necessary.

4.6 Fermilab has the right either to reject or to require correction of nonconforming supplies. Supplies are nonconforming when they are defective in material or workmanship or are otherwise not in conformity with subcontract requirements. Fermilab may reject nonconforming supplies with or without disposition instructions.

4.7 The Subcontractor shall remove supplies rejected or required to be corrected. However, Fermilab may require or permit correction in place, promptly after notice, by and at the expense of the Subcontractor. The Subcontractor shall not tender for acceptance corrected or rejected supplies without disclosing the former rejection or requirement for correction, and, when required, shall disclose the corrective action taken.

- (f) As directed by Fermilab, transfer title and deliver to Fermilab (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the subcontract had been completed, would be required to be furnished to Fermilab.
- (g) Complete performance of the work not terminated.
- (h) Take any action that may be necessary, or that Fermilab may direct, for the protection and preservation of the property related to this subcontract that is in the possession of the Subcontractor and in which Fermilab has or may acquire an interest.
- (i) Use its best efforts to sell, as directed or authorized by Fermilab, any property of the types referred to in subparagraph (f) above; *provided*, however, that the Subcontractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, Fermilab. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by Fermilab under this Subcontract, credited to the price or cost of the work, or paid in any other manner directed by Fermilab.

7.3 After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Subcontractor may submit to Fermilab a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by Fermilab. The Subcontractor may request Fermilab to remove those items or enter into an agreement for their storage. Within 15 days, Fermilab will accept title to those items and remove them or enter into a storage agreement. Fermilab may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

7.4 After termination, the Subcontractor shall submit a final termination settlement proposal to Fermilab in the form and with the certification prescribed by Fermilab. The Subcontractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by Fermilab upon written request of the Subcontractor within this 1-year period. However, if Fermilab determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Subcontractor fails to submit the proposal within the time allowed, Fermilab may determine, on the basis of information available, the amount, if any, due the Subcontractor because of the termination and shall pay the amount determined.

7.5 Subject to preceding paragraph 7.4, the Subcontractor and Fermilab may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph 7.5 or paragraph 7.6 below, exclusive of costs shown in subparagraph 7.6 (3) below, may not exceed the total subcontract price as reduced by (a) the amount of payments previously made and (2) the subcontract price of work not terminated. The subcontract shall be amended, and the Subcontractor paid the agreed amount. Paragraph 7.6 below shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

7.6 If the Subcontractor and Fermilab fail to agree on the whole amount to be paid because of the termination of work, Fermilab shall pay the Subcontractor the amounts determined by Fermilab as follows, but without duplication of any amounts agreed

on under paragraph 7.5 above:

- (1) The subcontract price for completed supplies or services accepted by Fermilab (or sold or acquired under subparagraph 7.2 (i)) not previously paid for, adjusted for any saving of freight and other charges.
- (2) The total of –
 - i) The costs incurred in the performance of the work terminated, including initial costs and preparatory expense allocable thereto, but excluding any costs attributable to supplies or services paid or to be paid under subparagraph 7.6 (1) above;
 - ii) The cost of settling and paying termination settlement proposals under terminated sub-subcontracts that are properly chargeable to the terminated portion of the subcontract if not included in subdivision (i) above; and
 - iii) A sum, as profit on subdivision (i) above, determined by Fermilab under 49.202 of the Federal Acquisition Regulation, in effect on the date of this subcontract, to be fair and reasonable; however, if it appears that the Subcontractor would have sustained a loss on the entire subcontract had it been completed, Fermilab shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.
- (3) The reasonable costs of settlement of the work terminated, including –
 - i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;
 - ii) The termination and settlement of sub-subcontracts (excluding the amounts of such settlements); and
 - iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory

7.7 Except for normal spoilage, and except to the extent that Fermilab expressly assumed the risk of loss, Fermilab shall exclude from the amounts payable to the Subcontractor under paragraph 7.6 above, the fair value, as determined by Fermilab, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to Fermilab or to a buyer.

7.8 The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this subcontract, shall govern all costs claimed, agreed to, or determined under this clause.

7.9 In arriving at the amount due the Subcontractor under this clause, there shall be deducted –

- (1) All unliquidated advance or other payments to the Subcontractor under the terminated portion of this subcontract;
- (2) Any claim which Fermilab has against the Subcontractor under this subcontract; and
- (3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Subcontractor or sold under the provisions of this clause and not recovered by or credited to Fermilab.

10.2 (b) or (c) of this clause shall be treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic.

- (c) "End products" means those articles, materials, and supplies to be acquired for public use under this subcontract.

10.2 The Subcontractor shall deliver only domestic source end products, except those:

- (a) For use outside the United States;
- (b) That 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;
- (c) For which the Department determines that domestic preference would be inconsistent with the public interest; or
- (d) For which the Department determines the cost to be unreasonable.

11. WALSH-HEALEY PUBLIC CONTRACTS ACT

11.1 If this subcontract is for the manufacture or furnishing of materials, supplies, articles, or equipment in an amount which exceeds or may exceed \$10,000 and is subject to the Walsh-Healey Public Contracts Act, as amended (41 U.S.C. 35-45),

- (a) All stipulations required by the Act and regulations issued by the Secretary of Labor (41 CFR Chapter 50) are incorporated by reference. These stipulations are subject to all applicable rulings and interpretations of the Secretary of Labor that are now, or may hereafter, be in effect.

- (b) All employees whose work relates to this subcontract shall be paid not less than the minimum wage prescribed by regulations issued by the Secretary of Labor (41 CFR 50-202.2). Learners, student learners, apprentices, and handicapped workers may be employed at less than the prescribed minimum wage (see 41 CFR 50-202.3) to the same extent that such employment is permitted under Section 14 of the Fair Labor Standards Act (41 U.S.C. 40).

12. RESTRICTIVE LEGENDS

12.1 Subcontractor shall not, unless expressly authorized by this subcontract, furnish, supply or deliver any data that is of a proprietary nature, is a trade secret or bears a restrictive legend. Fermilab assumes no liability with respect to data delivered without express authorization.

13. PERMITS

13.1 Except as otherwise directed by Fermilab, the Subcontractor shall procure all necessary permits or licenses and abide by all applicable laws, regulations, and ordinances of the United States and of the State, territory, and political subdivision in which the work under this subcontract is performed.

14. ENVIRONMENTAL PROTECTION

In performing this subcontract, the Subcontractor shall comply with the requirements set forth in all applicable Federal and non-Federal environmental protection laws, codes, ordinances, Executive Orders, regulations, and directives.

15. EXTRAS

15.1 Except as otherwise provided in this subcontract, no payment for extras shall be made unless such extras and the price therefor have been authorized in writing by Fermilab.

After a tube is received at Litton, Litton is authorized to proceed with the necessary repair action (Total Rebuild or Major Repair) and during the disassembly of the tube perform the aforementioned failure analysis.

2. **PROCEDURE**

Fermilab will issue separate purchase orders referencing this agreement when purchasing Total Rebuilds or Major Repairs.

3. **TERM**

This agreement is effective March 16, 1998, and shall remain in effect through and including September 16, 2000.

4. **PRICING**

Unit pricing, during the term of this agreement, shall be \$165,563.00 per each Total Rebuild Klystron and \$132,435.00 per each Major Repair klystron described within the scope of work. The price is exclusive of freight and any cost of new or repaired shipping containers required.

5. **DELIVERY**

Litton shall ship the Total Rebuild or Major Repair tube to Fermilab seven (7) months or sooner after receipt of the failed klystron.

6. **QUANTITY**

The BOA shall allow for a total quantity of five (5) Major Repairs (Klystrons) and five (5) Total Rebuilds (Klystrons) over the term of the subcontract.

7. **TESTING & DELIVERABLE DOCUMENTATION**

Each klystron delivered under this subcontract shall be accompanied by a copy of the test data obtained during the tests specified in Section 5.0 of Exhibit A, Specification, including a statement of the operating condition under which the test was run along with the initial and final ion pump current readings.

8. **SHIPMENT**

FOB point is San Carlos, California.

BASIC ORDERING AGREEMENT

This is a Basic Ordering Agreement (BOA) Number L-5859 between UNIVERSITIES RESEARCH ASSOCIATION, INC., (hereinafter sometimes referred to as "Fermilab" or "Buyer") and the Electron Devices Division of Litton Systems, Inc., (hereinafter sometimes referred to as "Litton" or "THE SELLER") for the remanufacture of klystron tubes. Fermilab enters into this Agreement in furtherance of its Prime Contract No. DEAC02-76CH03000 with the United States Department of Energy (DOE) for the operation of Fermi National Accelerator Laboratory.

1. SCOPE OF WORK

This Basic Ordering Agreement covers two levels of repair of the L-5859 klystron tubes transmitted to Litton by Fermilab in accordance with the delivery schedule set forth in Article 5 below. Upon receipt of a failed klystron tube, the Seller shall perform a failure analysis specifying the degree of repair required (total rebuild or major repair). The failure analysis report shall also advise the work necessary to bring the tube within specification (Exhibit A) requirement, identify failed part(s) and probable cause of failure, and suggest appropriate corrective action for the future.

Fermilab agrees to lend the driver and water load to Litton, if requested.

The Seller agrees to provide all labor, materials and facilities necessary to remanufacture, fabricate, test and deliver up to ten (10) 12 Megawatt peak-pulsed Klystrons (consisting of 5 Major Repairs and 5 Total Rebuilds) over a period of performance from March 16, 1998, through and including September 16, 2000.

The remanufactured Klystrons are to be supplied in strict accordance with the requirements of Exhibit A, Specification No. 0230.00-ED-60830, Rev. A.

- a. Total Rebuild: This repair action shall include at a minimum, replacement of the electron gun, replacement of the tube collector and output waveguide window assembly, ion pump and the repair or replacement of all tube sections in need of service including but not limited to the following: ceramic insulators, RF cavities and tuners, drift tubes, and the RF section. In the total rebuilding of certain klystron tubes designated by the Seller, the Seller shall replace the entire vacuum envelope.
- b. Major Repair: Replacement of the electron gun, RF window, ion pump, and collector.

The total rebuild or major repaired L-5859 klystron tubes shall be fully compliant with Specification No. 023.00-ED-60830 Rev. A (Exhibit A), and shall be warranted in accordance with Article 10 below.

This Agreement does not bind, nor purport to bind the Government of the United States.

In witness whereof the parties have executed this Agreement on the last of the dates shown below.

LITTON SYSTEMS, INC.
ELECTRON DEVICES DIVISION

UNIVERSITIES RESEARCH
ASSOCIATION, INC.

William R. Bunker
BY: William R. Bunker

Joe Fritio Jr.
BY: Joe Fritio Jr.

TITLE: Manager, Contracts Admin.

TITLE: HEAD, BUSINESS SERVICES

DATE: 3/24/98

DATE: 3/27/98

REB:rms
0225fermi.reb
rev.031198:Noon

9. INSPECTION AND ACCEPTANCE

- 9.1 Final inspection and acceptance will be performed at Fermilab by Fermilab personnel in accordance with Section 6.0 of Exhibit A Specification within sixty (60) days after receipt of the tube.
- 9.2 The requirements of the above paragraph are construed to be consistent with and cumulative to Article 4 entitled "Inspection" of Exhibit C (Fermilab Fixed Price Supply Subcontract Terms and Conditions, FL-2).

10. WARRANTY

Total Rebuild and Major Repair klystrons are warranted in accordance with the Litton Klystron Warranty, Exhibit E, which is incorporated herein and made a part hereof. Litton's warranty shall take precedence over Fermilab's warranty provision in Article 5 of Exhibit C.

11. PAYMENT TERMS

Net 30 days. Payment will be made after final acceptance at Fermilab.

12. ORDER OF PRECEDENCE

In the event of a conflict between the BOA and the Exhibits, the terms and conditions of the BOA shall take precedence.

13. COGNIZANT FERMILAB PERSONNEL

Direct all questions to Robert F. Cibic at (630) 840-3528, or Facsimile No. (630) 840-2907.

The following Exhibits are attached hereto and made a part of this Agreement:

- EXHIBIT A - Specification No. 0230.00ED-60830 Rev.A
- EXHIBIT B - Fermilab Subcontract General Provisions (FL-1) w/FL-100B and Limitation On Payments to Influence Certain Federal Transactions (FL-68)
- EXHIBIT C - Fermilab Fixed-Price Supply Subcontract Terms and Conditions (FL-2) And Clean Air and Water (FL-24)
- EXHIBIT D - Small Business and Small Disadvantaged Business Subcontracting Plan
- EXHIBIT E - Litton Klystron Warranty, K-1, September 1996



Fermi National Accelerator Laboratory
P.O. Box 500 • Batavia, Illinois • 60510

Specifications for a 12 Megawatt (Peak)

Klystron Amplifier

Specification #0230.00-ED-60830

May 9, 1988

Pulsed Klystron Amplifier: Description
12 megawatts (peak), 20.7 kW (average),
fixed tuned, sealed-off, 805 MHz, cathode pulsed,
electromagnetically focused, waveguide output,
coaxial input, water cooled, ion-pumped

Alfred Morette May 10, 1988
Alfred Morette Date
Project Engineer

D.E. Young May 18, 1988
D.E. Young, Head Date
Linac Department

H.T. Edwards June 2, 1988
H.T. Edwards, Head Date
Accelerator Division

EXHIBIT A

SPECIFICATION NO. 0230.00-ED-60830 REV. A

- 3.13 Harmonic power at each harmonic..... -30 dBc or better
with a resistive load VSWR of less than 1.15:1
- 3.14 Harmonic power at each harmonic..... -27 dBc or better
at harmonic resonance of output circuit
- 3.15 Spurious power, total..... -80 dBc or better
- 3.16 Phase sensitivity to beam voltage..... 10 deg/eb(%) nominal
change in percent 15 deg/eb(%)max
- 3.17 Phase drift as a function of inlet..... 3 deg/degree C max
cooling water temperature change
- 3.18 Peak inverse voltage of..... 10% max to produce
less than 3%
amplitude jitter on
backswing voltage
- 3.19 Amplitude modulation from heater..... 1% max
- 3.20 Amplitude drift as a function of inlet..... 0.2%/degree C max
cooling water temperature change
- 3.21 Phase modulation from heater..... 2 deg max
- 3.22 Amplitude sensitivity (beam voltage)..... 180 kW/kV nominal
250 kW/kV max
- 3.23 Phase shift with rf drive power change..... 5 deg/dB
from -6 dB below to saturation
- 3.24 The tube shall be used to provide 12 MW (peak) of rf power to a
resonant cavity accelerator load having a Q of 25,000. The steady-
state load VSWR during the pulse shall be 1.5:1 or less at
arbitrary phase angle and a full power reflected transient with a
decay time of 10. microsec. will exist at "turn on" and "turn-off"
of the rf pulse. Maximum linearity of the rf power-in to rf power-
out transfer curve in the upper third of the rf power output range
before saturation shall be a design goal. The rf power delivered to
the accelerator cavity load will be controlled over this range by a
fast closed-loop feedback system to maintain the accelerating
electric field and phase constant under various conditions.
- 3.25 Heater, ac voltage and current, surge..... To be specified by
protection and warm up time vendor

1.0 Specification #0230.00-ED-60830 For A 12 Megawatt (Peak) Pulsed Klystron Amplifier Tube

2.0 Scope

This specification establishes the requirements for the design, fabrication, testing and delivery of a 12 Megawatt (peak) pulsed Klystron Amplifier consisting of one each of the following: Klystron Tube, Focusing Magnet, Klystron Tube Socket and Lead X-Ray Shielding Set. The Klystron Amplifier will be utilized in the upgrade of the Fermilab 200 MeV Linear Accelerator to an energy of 400 MeV.

3.0 Electrical Specifications

- 3.1 Center frequency (fixed tuned)..... 805 MHz
- 3.2 Output power peak (at center frequency)..... 12 MW, min.
into a resistive load with VSWR of 1.5:1
or less and any phase angle
- 3.3 Output power average..... 20.7 kW
- 3.4 Pulse duration, rf..... 115 micro sec
- 3.5 Pulse duration, video between 90% points..... 128 micro sec
rise time..... 9 micro sec
fall time..... 18 micro sec
- 3.6 Pulse repetition rate..... 15 Hz
- 3.7 Gain, at saturation..... 50 dB nominal
45 dB min
- 3.8 Efficiency (at center frequency):..... 50% nominal
45% min
- 3.9 Instantaneous bandwidth at -0.5 dB points.... 4 MHz objective
3 MHz min
- 3.10 Electron gun perveance..... 2 micropervance nom
1.75 microperv min
- 3.11 Capacitance between cathode and body..... 75 pF max
- 3.12 Input match (-6 dB from and to saturation.... 1.5:1 VSWR max
with Klystron beam current "on")

- 4.10 Ion pump size..... to be specified and supplied by vendor
- 4.11 Ion pump connection..... to be specified by vendor if non-standard
- 4.12 Tube length (from the bottom of..... 118 inch max the base to top, including water connections)
- 4.13 Distance when mounted to focusing..... 97 inch max electromagnet between bottom of focusing electromagnet flange to top of klystron including water connections
- 4.14 Tube weight..... 1200 lbs max
- 4.15 Tube x-ray shielding..... P/N to be specified and supplied by vendor
- 4.16 X-ray shield weight..... to be specified and supplied by vendor - 400 lbs max
- 4.17 Focusing electromagnet..... P/N to be specified and supplied by vendor
- 4.18 Focusing electromagnet diameter..... 28 inch max including mounting flange (water header and electrical boxes may protrude out an additional 8 inches)
- 4.19 Focusing electromagnet: weight..... 2000 lbs max electrical power..... 5000 W max water cooling..... water gpm to be specified by vendor 5 gpm nominal with return side pressure of 40 psi nominal, input water temp range 13 to 29°C available

- 3.26 The dynamic gain shall not deviate more than 10 dB over the interval of rf output power from 8 MW to saturation, and shall not exceed 80 dB nor be less than 45 dB over this interval. There shall be no discontinuous changes in the rf power output when the rf drive is changed to produce output power over this interval at any time during the rf pulse.

4.0 General Specifications

- 4.1 Mounting position..... vertical, cathode down
- 4.2 Collector..... grounded
- 4.3 Collector cooling..... water gpm to be specified by vendor, 25 gpm nominal with return side pressure of 40 psi nominal, input water temp range 13 to 29°C available
- 4.4 Body cooling..... water gpm to be specified by vendor 5 gpm nominal with return side pressure of 40 psi nominal, input water temp range 13 to 29°C available
- 4.5 Base connection..... socket; part number (P/N) to be specified and supplied by vendor
- 4.6 RF input connection..... Mates with type "N" UG-21-D/U, or equiv
- 4.7 RF output connection..... WR-975 waveguide
- 4.8 Waveguide pressurisation..... to be specified by vendor
- 4.9 Tuning..... fixed (set at factory)

voltage for at least six equally spaced continuous 15 kV intervals up to the maximum specified cathode voltage. The plot on log-log paper shall be a straight line, and the perveance determined from this line will be as specified.

5.1.2 With the tube on the rf test stand and operating into a resistive calorimeter load (VSWR less than or equal 1.15:1) and with the pulse length as per 5.1.1 and at specified rf drive level and cathode voltage demonstrate:

1. Average power output greater than or equal to 20.7 kW.
2. Peak power output greater than or equal to 12 Megawatts.
3. Efficiency defined as peak rf power output divided by beam power input is greater than or equal to 45%.
4. That the dynamic gain does not deviate more than 10 dB over the interval of rf output power from 6 kW to saturation, and shall not exceed 60 dB nor be less than 45 dB over this interval and that there are no abrupt discontinuous changes in the rf power output when the rf drive is changed to produce output power over this interval at any time during the rf pulse. This shall be determined by plotting the rf input-power to output-power transfer curve from zero power output to full saturation output.
5. Compliance with noise specifications 3.13, 3.14 and 3.15.

5.1.3 With the tube on the rf test stand and operating into a load with VSWR=1.5:1 at six approximately equally spaced phase angles spanning 180 degrees and with a minimum 40 microsec pulse length and at specified rf drive level and cathode voltage, demonstrate compliance with dynamic gain specification 3.24.

8.0 Tests to be Performed at Fermilab for Final Acceptance

8.1 The following tests will be performed at Fermilab by Fermilab personnel to determine final acceptance:

- 4.20 The rf-power output shall be through a WR-975 waveguide provided with a standard waveguide flange as shown on drawing #0230.00-ED-60830. The Klystron window shall be accessible for periodic inspection and cleaning from the output waveguide flange. Window-cooling air or water flow to be specified and shall be kept to a minimum, consistent with this specification.
- 4.21 The Klystron shall be mounted vertically, cathode end down. The cathode and tube socket will be immersed in a Marcol Special High Voltage Insulating Oil (or equivalent). Electrical gradients around cathode insulator and tube socket assembly shall be low enough so that no arcing will occur if the oil deteriorates to 25 kV when tested as specified in ASTM Standard D877.
- 4.22 The tube socket will be designed with spring loaded contacts and be designed to be mounted to the base of the magnet so that the Klystron can be removed without disconnecting leads or removing the magnet from the pulse transformer.
- 4.23 The design of the focusing electromagnet in the cathode region shall allow adequate free convective oil flow for necessary heat removal.
- 4.24 The magnet assembly shall be configured so that it can be readily lifted out of its packing crate with an overhead crane.
- 4.25 The Klystron assembly shall be configured so that it can be lifted and mounted to the magnet with a overhead crane. The assembly of the Klystron and magnet, thus formed, shall also be configured so that it can be lifted onto the pulse transformer tank by the use of overhead crane.
- 4.26 X-Ray shielding shall be provided so that when the tube is running at full power, the radiation level shall not exceed 2.5 mR/h anywhere within a radius of 18 inches from the tube and tube window when measured using a Victoreen 440-RF ionisation chamber or equivalent.

5.0 Tests to be Performed by the Vendor Before Shipment

- 5.1 The following tests will be performed by the vendor at the vendor's plant prior to shipment to Fermilab:
 - 5.1.1 With the filament set to rated voltage and current and with no rf drive signal and with the video pulse length set to a minimum of 40 microsec. on the vendor's rf test stand, measure and plot peak beam current versus cathode

7.0 Operating Environmental Conditions and Tube Lifetime Objectives

The Klystron amplifier equipment will be operated at Fermilab to power a resonant cavity for the acceleration of charged particles. The equipment must be designed to operate continuously at the nominal specifications listed in this document. The equipment will be installed and operated in a laboratory building with the temperature, humidity and dirt controlled so as not to limit the lifetime of the installed equipment. An important objective of the design will be a long lifetime, hopefully in excess of 40,000 hours, for the tube and cathode. As-built manufacturing tube drawings, special handling, operating and maintenance instructions must be provided with the delivery of the equipment from the vendor. Another objective of the design will be to provide the capability for rebuilding the tube.

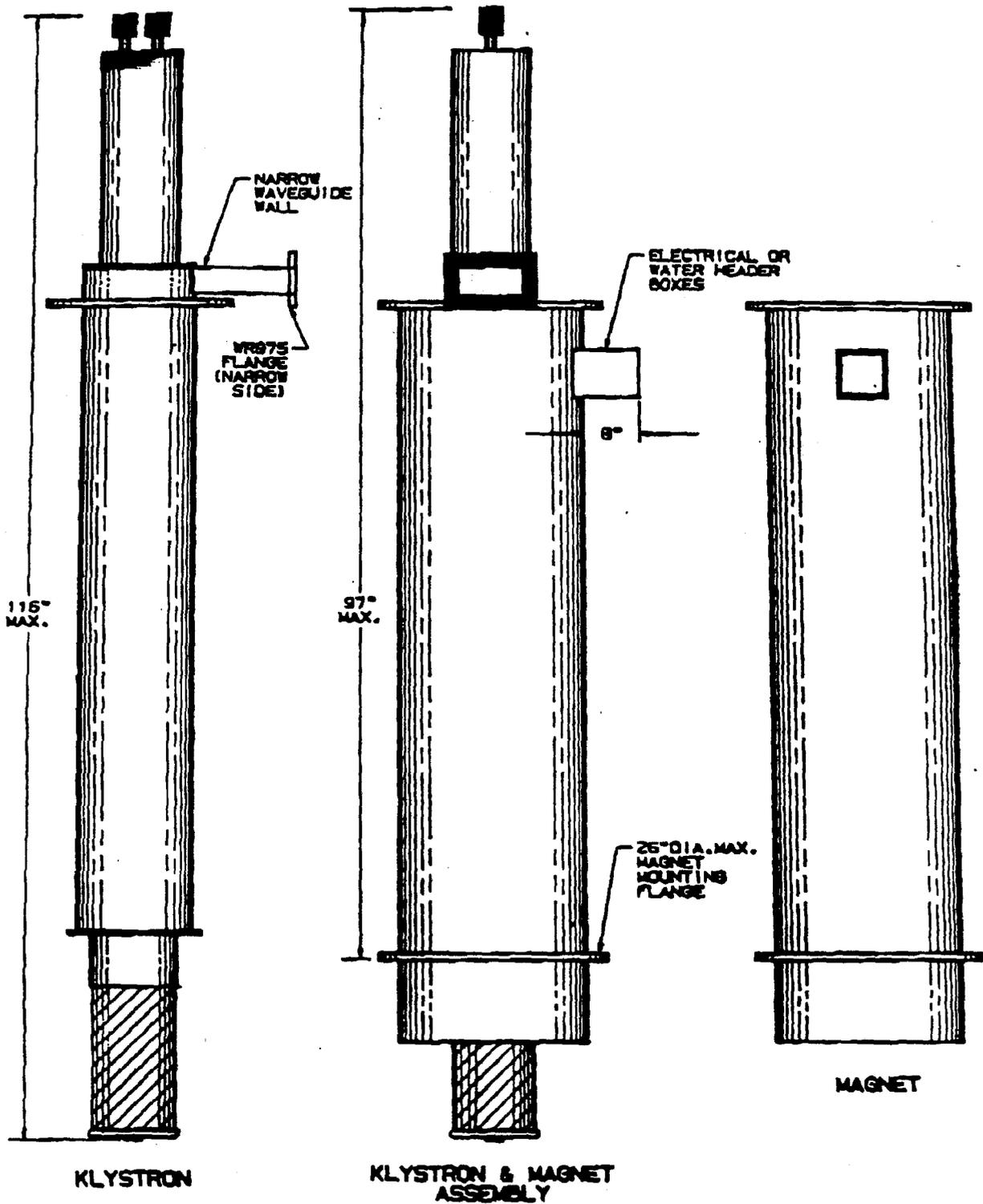
- 6.1.1 With the filament set to rated voltage and current, and with no rf drive signal, and with the video pulse length set to electrical specification 3.4 (125 microsec) on Fermilab's rf test stand, Fermilab will measure and plot peak beam current versus cathode voltage for at least six equally spaced continuous 15 kV intervals upto the maximum specified cathode voltage. The plot on log-log paper shall be a straight line, and the perveance determined from this line will be as specified.
- 6.1.2 With the tube on the Fermilab's rf test stand and operating into a resistive calorimeter load (VSWR less than or equal 1.15:1) and with the pulse length as per 3.4 and at specified rf drive level, pulse length and cathode voltage demonstrate:
1. Average power output greater than or equal to 20.7 kW
 2. Peak power output greater than or equal to 12 Megawatts
 3. Efficiency defined as peak rf power output divided by beam power input is greater than or equal to 45%
 4. That the dynamic gain does not deviate more than 10 dB over the interval of rf output power from 6 MW to saturation, and shall not exceed 80 dB nor be less than 45 dB over this interval and that there are no abrupt discontinuous changes in the rf power output when the rf drive is changed to produce output power over this interval at any time during the rf pulse. This shall be determined by plotting the rf input power to output power transfer curve from zero power output to full saturation output.
- 6.1.3 With the tube on the rf test stand and operating into a load with VSWR=1.5:1 at six approximately equally spaced phase angles spanning 180 degrees and with a 125 microsec pulse length and at specified rf drive level and cathode voltage demonstrate compliance with dynamic gain specification 3.24.

EXHIBIT B

**FERMILAB SUBCONTRACT GENERAL PROVISIONS (FL-1)
With
(FL-100B)**

&

**LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN
FEDERAL TRANSACTIONS
(FL-68)**



DRAWING #0230.00-ED-60830

CLEAN AIR AND WATER

1. DEFINITIONS AS USED IN THIS CLAUSE:

- a) "Air Act" means the Clean Air Act (42 U.S.C. 7401 et seq.).
- b) "Clean Air Standards" means,
 - 1) Any enforceable rules, regulations, guidelines, standards, limitations, orders, controls, prohibitions, work practices, or other requirements contained in, issued under, or otherwise adopted under the Air Act or Executive Order 11738.
 - 2) An applicable implementation plan as described in section 110(d) of the Air Act (42 U.S.C. 7410(d));
 - 3) An approved implementation procedure or plan under section 111(c) or section 111(d) of the Air Act (42 U.S.C. 7411(c) or (d)); or
 - 4) An approved implementation procedure under section 112(d) of the Air Act (42 U.S.C. 7412(d)).
- c) "Clean water standards," means any enforceable limitation, control, condition, prohibition, standard, or other requirement promulgated under the Water Act or contained in a permit issued to a discharger by the Environmental Protection Agency or by a State under an approved program as authorized by section 402 of the Water Act (33 U.S.C. 1342), or by local government to ensure compliance with pretreatment regulations as required by section 307 of the Water Act (33 U.S.C. 1317).
- d) "Compliance," means compliance with:
 - 1) *Clean air or water standards*; or
 - 2) A schedule or plan ordered or approved by a court of competent jurisdiction, the Environmental Protection Agency, or an air or water pollution control

agency under the requirements of the Air Act or Water Act and related regulations.

- e) "Facility," means any building, plant, installation, structure, mine, vessel or other floating craft, location, or site of operations, owned, leased, or supervised by a Subcontractor or sub-subcontractor, used in the performance of a subcontract or sub-subcontract. When a location or site of operations includes more than one building, plant, installation or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the Environmental Protection Agency, determines that independent facilities are collocated in one geographical area.
- f) "Water Act," means Clean Water Act (33 U.S.C. 1251 et seq.).

2. THE SUBCONTRACTOR AGREES:

- a) To comply with all the requirements of section 114 of the Clean Air Act (42 U.S.C. 7414) and section 308 of the Clean Water Act (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports and information, as well as other requirements specified in section 114 and section 308 of the Air Act and the Water Act, and all regulations and guidelines issued to implement those acts before the award of this subcontract;
- b) That no portion of the work required by this subcontract will be performed in a facility listed on the Environmental Protection Agency List of Violating Facilities on the date when this subcontract was awarded unless and until the EPA eliminates the name of the facility from the listing;
- c) To use best efforts to comply with clean air standards and clean water standards at the facility in which the subcontract is being performed; and
- d) To insert the substance of this clause into any non-exempt subcontract, including this subparagraph 2.(d).

FERMILAB-LU-235

EXHIBIT C

**FERMILAB FIXED-PRICE SUPPLY SUBCONTRACT
TERMS & CONDITIONS FL-2**

&

**CLEAN AIR AND WATER
(FL-24)**

**MEMORANDUM REGARDING AGREEMENT WITH
MASTER SUBCONTRACTING PLAN**

**Litton Systems, Inc.
Electron Devices Division
960 Industrial Road
San Carlos, California 94070-4194**

1 August 1997 - 31 July 2000

Contractor Approval

Richard L. Greeno 6-10-97
(date)

**Richard L. Greeno
Senior Subcontract Administrator
Small Business Liaison Officer**

ACO Approval

Karen A. McIver 7/11/97
(date)

**Karen McIver
Administrative Contracting Officer**

EXHIBIT D

**SMALL BUSINESS AND SMALL DISADVANTAGED
BUSINESS PLAN**

Policy

The policy statement to formalize Litton EDD's commitment to PL 99-661, Section 1207, PL 100-180, Section 806, and PL 103-355 is contained in Section 2.1, SMALL BUSINESS SUBCONTRACTING PROGRAM, from the LEDD Purchasing Manual and is signed by the Division President. The LEDD policy requires Division personnel to exercise "the maximum practicable utilization of small, woman-owned small, and small disadvantaged business." Emphasis is placed on subcontracting with SDBs/WOSBs/HBCUs/MIs. The success of this policy is demonstrated by the fact that LEDD has exceeded the 5% SDB goal every year for the past nine years. LEDD has earned numerous awards for its subcontracting program.

Past Performance

Litton Electron Devices Division (LEDD), San Carlos Operation was given a rating of OUTSTANDING for Fiscal years 1987 thru 1995 and won the Dwight D. Eisenhower Award for excellence in 1996. LEDD San Carlos, received from the Defense Contract Management Area Operation-San Francisco an award for exceeding the 5% goal for subcontracting with Small Disadvantaged Businesses, during Fiscal Years 1991, 1992, 1993, 1994, 1995 and 1996. The U.S. Small Business Administration (SBA) gave LEDD a rating of EXCELLENT and the Award for Distinction in 1993. LEDD was a finalist for the SBA's Dwight D. Eisenhower Award for Excellence in 1994, 1995 and won the award in 1996.

Development of Percentage Goals

When LEDD has experience manufacturing the product being proposed or a similar product, goals are established which exceed historical performance even if the historical performance exceeded the PL 99-661 or PL 103-355 goals. When LEDD has no experience manufacturing the product being proposed, the SB, WOSB and SDB goals will exceed 20% for SB's and exceed 5% for WOSBs and SDBs. The SB/SDB/WOSB/HBCU/MI firms identified on the Enclosure have been qualified by LEDD, and in most cases were the previous suppliers for those parts. LEDD policy requires the inclusion of the previous supplier on the RFQ supplier list for the immediate buy or provide written justification for excluding the previous supplier. Therefore, there is a very high probability that all the SB/SDB/WOSB/HBCU/MI firms on the Enclosure will be solicited for this effort. Additionally, LEDD Buyers are encouraged to qualify new SB/SDB/WOSB/HBCU/MI suppliers.

Indirect Costs

Indirect and Overhead costs are not included in the subcontracting goals which are calculated as discussed above.

Subcontracting Plan Submitted In
 Accordance with Public Law and
 FAR 52.219-9

Date 3/3/98

Customer: Fermitab

Prime Contract Number: _____

Subcontract Number: _____

Purchase Order Number: _____

Request for Proposal Number: 97 REB 228

Name of Individual completing this plan:

Richard L. Greeno
 (415) 591-8411, Extension 2357

	<u>Percentage Goals</u>	<u>Total Purchased Parts Planned Dollars</u>
Large Business	<u>23.3 %</u>	<u>\$ 31,585</u>
Small Business (SB) (Includes SDB, WOSB, HBCU, & MI)	<u>76.7 %</u>	<u>\$ 104,144</u>
Small Disadvantaged Business (SDB) (Includes Historically Black Colleges & Universities (HBCU), & Minority Institutions (MI))	<u>11.0%</u>	<u>\$ 14,930</u>
HBCUs and Mis	<u>0 %</u>	<u>\$ 0</u>
Woman-Owned Small Business (WOSB)	<u>8.5 %</u>	<u>\$ 11,536</u>