

<b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b> OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30				1. REQUISITION NUMBER 91110 41075425		PAGE 1 OF <b>26</b>	
2. CONTRACT NO.		3. AWARD/EFFECTIVE DATE		4. ORDER NUMBER		5. SOLICITATION NUMBER N65540-04-Q-0305	
7. FOR SOLICITATION INFORMATION CALL:		a. NAME LINDA STIEMKE		b. TELEPHONE NUMBER (No Collect Calls) 215-897-1355 215-897-7059 (FAX)		6. SOLICITATION ISSUE DATE 04-JUN-16	
9. ISSUED BY CONTRACTING OFFICER NSWC CARDEROCK DIVISION 5001 S. BROAD STREET PHILADELPHIA PA 19112-1403 ATTN: LINDA STIEMKE 215-897-1355		CODE N65540		10. THIS ACQUISITION IS <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: 100 % FOR <input checked="" type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> SMALL DISADV. BUSINESS <input type="checkbox"/> 8(A) SIC: 3613 SIZE STANDARD: 750		11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) 13b. RATING 14. METHOD OF SOLICITATION <input checked="" type="checkbox"/> RFQ <input type="checkbox"/> IFB <input type="checkbox"/> RFP	
15. DELIVER TO RECEIVING OFFICER NSWC CARDEROCK DIVISION 1601 LANGLEY AVENUE PHILADELPHIA PA 19112-5051 ATTN: NAVAL BUSINESS CENTER		CODE N65540		16. ADMINISTERED BY CODE N65540		12. DISCOUNT TERMS	
17a. CONTRACTOR/OFFEROR CODE FACILITY CODE TELEPHONE NO.		18a. PAYMENT WILL BE MADE BY CODE		17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER <input type="checkbox"/>		18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input checked="" type="checkbox"/> SEE ADDENDUM	
19. ITEM NO. 0001		20. SCHEDULE OF SUPPLIES/SERVICES REQN. NO. 91110 /41075425 450VAC, 3-PHASE, 60HZ, 400KW RESISTIVE LOAD BANK CONSISTING OF 4 ISOLATED SECTIONS OF 100KW, 128A EACH, IN ACCORDANCE WITH THE ATTACHED PURCHASE <small>(Attach Additional Sheets as Necessary)</small>		21. QUANTITY 2		22. UNIT EA	
23. UNIT PRICE		24. AMOUNT		25. ACCOUNTING AND APPROPRIATION DATA		26. TOTAL AWARD AMOUNT (For Govt. Use Only)	
<input checked="" type="checkbox"/> 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3, AND 52.212-5 ARE ATTACHED. ADDENDA <input checked="" type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.		<input type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.		28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN _____ COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN. <input type="checkbox"/>		29. AWARD OF CONTRACT: REFERENCE OFFER DATED _____ YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: <input type="checkbox"/>	
30a. SIGNATURE OF OFFEROR/CONTRACTOR		30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT)		30c. DATE SIGNED		31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)	
32a. QUANTITY IN COLUMN 21 HAS BEEN <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED		32b. SIGNATURE OF AUTHORIZED GOVT. REPRESENTATIVE		32c. DATE		33. SHIP NUMBER <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	
41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT		41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER		41c. DATE		34. VOUCHER NUMBER	
42b. RECEIVED AT (Location)		42c. DATE REC'D (YY/MM/DD)		42d. TOTAL CONTAINERS		35. AMOUNT VERIFIED CORRECT FOR	
36. PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL		37. CHECK NUMBER		38. S/R ACCOUNT NUMBER		39. S/R VOUCHER NUMBER	
40. PAID BY		42a. RECEIVED BY (Print)					

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 2 OF 25

VENDOR:

## SECTION B SUPPLIES/SERVICES

ITEM	SUPPLIES/SERVICES SPECIFICATION	QUANTITY	UI	U-PRICE	AMOUNT
0002	REQN. NO. 91110 /41075442 450VAC, 3-PHASE, 60HZ, 400KW, 300KVAR RESISTIVE/REACTIVE LOAD BANK CONSISTING OF 4 ISOLATED SECTIONS OF 100KW, 75KVAR, 160A EACH, IN ACCORDANCE WITH THE ATTACHED PURCHASE SPECIFICATION	2	EA		
0003	REQN. NO. 91110 /41075444 375VDC, 900KW LOAD BANK CONSISTING OF 10 ISOLATED SECTIONS OF 90KW, 240A EACH, IN ACCORDANCE WITH THE ATTACHED PURCHASE SPECIFICATION	1	EA		
0004	REQN. NO. 91110 /41424481 208VAC, 3-PHASE, 60HZ, 60KW 45KVAR RESISTIVE/REACTIVE LOAD BANK CONSISTING OF 6 ISOLATED SECTIONS OF (2) 20KW, 15KVAR, 70A AND (4) 5KW, 3.75KVAR, 17.5A EACH, IN ACCORDANCE WITH THE ATTACHED PURCHASE SPECIFICATION	1	EA		
0005	REQN. NO. 91110 /41075450 48VDC, 12KW LOAD BANK CONSISTING OF 4 ISOLATED SECTIONS OF (2) 5KW, 104A AND (2) 1KW, 21A EACH, IN ACCORDANCE WITH THE ATTACHED PURCHASE SPECIFICATION	1	EA		
0006	REQN. NO. 91110 /41075454 600VDC, 1020KW LOAD BANK CONSISTING OF 2 ISOLATED SECTIONS OF 510KW, 850A EACH, IN ACCORDANCE WITH THE ATTACHED PURCHASE SPECIFICATION	1	EA		
0007	REQN. NO. 91110 /41075458 RELEASE FOR MANUFACTURE DOCUMENTATION, IN ACCORDANCE WITH THE ATTACHED PURCHASE SPECIFICATION	1	LT		
0008	REQN. NO. 91110 /41075460 TECHNICAL MANUAL, IN ACCORDANCE	3	SETS		

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 3 OF 26

VENDOR:

SECTION B SUPPLIES/SERVICES

ITEM	SUPPLIES/SERVICES	QUANTITY	UI	U-PRICE	AMOUNT
	WITH THE ATTACHED PURCHASE SPECIFICATION				
0009	REQN. NO. 91110 /41424482 TEST REPORT, IN ACCORDANCE WITH SECTION 5.1.3 OF THE ATTACHED PURCHASE SPECIFICATION	1	EA		

1. This Request for Quotations (RFQ) covers the establishment of a firm-fixed price purchase order for the furnishing of Test Site Load Banks and Associated Technical Data. All items shall be in accordance with the requirements set forth in the Purchase Specification for Test Site Load Banks dated 28 May 2004. This RFQ is issued using Simplified Acquisition Procedures pursuant to the Test Program for Certain Commercial Items as authorized by Subpart 13.5 of the Federal Acquisition Regulation (FAR).

2. The Government intends to make a single award for all items to the low price technically acceptable offeror. Technical acceptability shall be determined based on an assessment that the Test Site Load Banks to be furnished comply with the specification requirements. In order to evaluate technical acceptability, offerors are required to submit information as part of their quotation specifically addressing compliance with the following specification requirements.

Paragraph 5.1.1:

- 5.1.1.A.1 - 5
- 5.1.1.B.1 - 2, 5 - 8
- 5.1.1.C.1 - 2, 4 - 6
- 5.1.1.D.1 - 8
- 5.1.1.E.1
- 5.1.1.F.1
- 5.1.1.G.1
- 5.1.1.K.1
- 5.1.1.L.1

Paragraph 5.1.2.1:

- 5.1.2.1.A.1 - 3
- 5.1.2.1.B.1 - 5
- 5.1.2.1.C.1
- 5.1.2.1.D.1
- 5.1.2.1.E.1

Paragraph 5.1.2.2:

- 5.1.2.2.A.1 - 3
- 5.1.2.2.B.1 - 5
- 5.1.2.2.C.1
- 5.1.2.2.D.1
- 5.1.2.2.E.1

Paragraph 5.1.2.3:

- 5.1.2.3.A.1 – 3
- 5.1.2.3.B.1 – 5
- 5.1.2.3.C.1
- 5.1.2.3.D.1

Paragraph 5.1.2.4:

- 5.1.2.4.A.1 – 3
- 5.1.2.4.B.1 – 5
- 5.1.2.4.C.1
- 5.1.2.4.D.1

Paragraph 5.1.2.5:

- 5.1.2.5.A.1 – 3
- 5.1.2.5.B.1 – 5
- 5.1.2.5.C.1
- 5.1.2.5.D.1

Paragraph 5.1.2.6:

- 5.1.2.6.A.1 – 3
- 5.1.2.6.B.1 – 5
- 5.1.2.6.C.1
- 5.1.2.6.D.1

Paragraph 5.1.3:

- 5.1.3.A.1
- 5.1.3.B.1 - 2
- 5.1.3.C.1 - 4

Failure to submit adequate information will result in a quotation being rated as Unacceptable. The Government intends on making an award based on the initial quotations received in response to this RFQ. Therefore, an offeror's initial quotation should contain its best offer from both a price and a technical standpoint.

3. Offerors are reminded this RFQ has been set-aside for the exclusive participation of small business concerns in accordance with FAR Clause 52.219-6 and any concern proposing to furnish a product that it does not itself manufacture must furnish the product of a small business manufacturer.

4. All items will be delivered on a F.O.B. Destination basis (that is, inclusive of all delivery, shipping and transportation costs) to the destination specified in this RFQ. Quotations submitted on other than an F.O.B. destination basis will be determined to be nonresponsive and will not be considered for award.

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO.

7 OF 26

VENDOR:

52.212-4 CONTRACT TERMS AND CONDITIONS--COMMERCIAL ITEMS  
(OCT 2003)

(a) Inspection/Acceptance. The Contractor shall only tender for acceptance those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its post-acceptance rights--(1) Within a reasonable time after the defect was discovered or should have been discovered; and (2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(b) Assignment. The Contractor or its assignee may assign its rights to receive payment due as a result of performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency in accordance with the Assignment of Claims Act (31 U.S.C. 3727). However, when a third party makes payment (e.g., use of the Governmentwide commercial purchase card), the Contractor may not assign its rights to receive payment under this contract.

(c) Changes. Changes in the terms and conditions of this contract may be made only by written agreement of the parties.

(d) Disputes. This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613). Failure of the parties to this contract to reach agreement on any request for equitable adjustment, claim, appeal or action arising under or relating to this contract shall be a dispute to be resolved in accordance with the clause at FAR 52.233-1, Disputes, which is incorporated herein by reference. The Contractor shall proceed diligently with performance of this contract, pending final resolution of any dispute arising under the contract.

(e) Definitions. The clause at FAR 52.202-1, Definitions, is incorporated herein by reference.

(f) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence such as, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(g) Invoice. (1) The Contractor shall submit an original invoice and three copies (or electronic invoice, if authorized,) to the address designated in the contract to receive invoices. An invoice must include--

- (i) Name and address of the Contractor;
- (ii) Invoice date and number;
- (iii) Contract number, contract line item number and, if applicable, the order number;
- (iv) Description, quantity, unit of measure, unit price and extended price of the items delivered;
- (v) Shipping number and date of shipment including the

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 8 OF 26

## VENDOR:

bill of lading number and weight of shipment if shipped on Government bill of lading;

(vi) Terms of any discount for prompt payment offered;

(vii) Name and address of official to whom payment is to be sent;

(viii) Name, title, and phone number of person to notify in event of defective invoice; and

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision, contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(2) Invoices will be handled in accordance with the Prompt Payment Act (31 U.S.C. 3903) and Office of Management and Budget (OMB) prompt payment regulations at 5 CFR part 1315.

(h) Patent indemnity. The Contractor shall indemnify the Government and its officers, employees and agents against liability, including costs, for actual or alleged direct or contributory infringement of, or inducement to infringe, any United States or foreign patent, trademark or copyright, arising out of the performance of this contract, provided the Contractor is reasonably notified of such claims and proceedings.

(i) Payment. (1) Items accepted. Payment shall be made for items accepted by the Government that have been delivered to the delivery destinations set forth in this contract.

(2) Prompt payment. The Government will make payment in accordance with the Prompt Payment Act (31 U.S.C. 3903) and prompt payment regulations at 5 CFR part 1315.

(3) Electronic Funds Transfer (EFT). If the Government makes payment by EFT, see 52.212-5(b) for the appropriate EFT clause.

(4) Discount. In connection with any discount offered for early payment, time shall be computed from the date of the invoice. For the purpose of computing the discount earned, payment shall be considered to have been made on the date which appears on the payment check or the specified payment date if an electronic funds transfer payment is made.

(5) Overpayments. If the Contractor becomes aware of a duplicate contract financing or invoice payment or that the Government has otherwise overpaid on a contract financing or invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(j) Risk of loss. Unless the contract specifically provides otherwise, risk of loss or damage to the supplies provided under this contract shall remain with the Contractor until, and shall pass to the Government upon:

(1) Delivery of the supplies to a carrier, if transportation is f.o.b. origin; or

(2) Delivery of the supplies to the Government at the

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 9 OF 25

## VENDOR:

destination specified in the contract, if transportation is f.o.b. destination.

(k) Taxes. The contract price includes all applicable Federal, State, and local taxes and duties.

(l) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges the Contractor can demonstrate to the satisfaction of the Government using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred which reasonably could have been avoided.

(m) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(n) Title. Unless specified elsewhere in this contract, title to items furnished under this contract shall pass to the Government upon acceptance, regardless of when or where the Government takes physical possession.

(o) Warranty. The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

(p) Limitation of liability. Except as otherwise provided by an express warranty, the Contractor will not be liable to the Government for consequential damages resulting from any defect or deficiencies in accepted items.

(q) Other compliances. The Contractor shall comply with all applicable Federal, State and local laws, executive orders, rules and regulations applicable to its performance under this contract.

(r) Compliance with laws unique to Government contracts. The Contractor agrees to comply with 31 U.S.C. 1352 relating to limitations on the use of appropriated funds to influence certain Federal contracts; 18 U.S.C. 431 relating to officials not to benefit; 40 U.S.C. 327, et seq., Contract Work Hours and Safety Standards Act; 41 U.S.C. 51-58, Anti-Kickback Act of 1986; 41 U.S.C. 265 and 10 U.S.C. 2409 relating to whistleblower protections; 49 U.S.C. 40118, Fly American; and 41 U.S.C. 423 relating to procurement integrity.

(s) Order of precedence. Any inconsistencies in this solicitation or contract shall be resolved by giving precedence in the following order:

- (1) The schedule of supplies/services.
- (2) The Assignments, Disputes, Payments, Invoice, Other Compliances, and Compliance with Laws Unique to Government Contracts paragraphs of this clause.

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 10 OF 26

VENDOR:

- (3) The clause at 52.212-5.
  - (4) Addenda to this solicitation or contract, including any license agreements for computer software.
  - (5) Solicitation provisions if this is a solicitation.
  - (6) Other paragraphs of this clause.
  - (7) The Standard Form 1449.
  - (8) Other documents, exhibits, and attachments.
  - (9) The specification.
- (t) Central Contractor Registration (CCR). (1) Unless exempted by an addendum to this contract, the Contractor is responsible during performance and through final payment of any contract for the accuracy and completeness of the data within the CCR database, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to review and update on an annual basis from the date of initial registration or subsequent updates its information in the CCR database to ensure it is current, accurate and complete. Updating information in the CCR does not alter the terms and conditions of this contract and is not a substitute for a properly executed contractual document.
- (2) (i) If a Contractor has legally changed its business name, "doing business as" name, or division name (whichever is shown on the contract), or has transferred the assets used in performing the contract, but has not completed the necessary requirements regarding novation and change-of-name agreements in FAR subpart 42.12, the Contractor shall provide the responsible Contracting Officer a minimum of one business day's written notification of its intention to (A) change the name in the CCR database; (B) comply with the requirements of subpart 42.12; and (C) agree in writing to the timeline and procedures specified by the responsible Contracting Officer. The Contractor must provide with the notification sufficient documentation to support the legally changed name.
- (ii) If the Contractor fails to comply with the requirements of paragraph (t)(2)(i) of this clause, or fails to perform the agreement at paragraph (t)(2)(i)(C) of this clause, and, in the absence of a properly executed novation or change-of-name agreement, the CCR information that shows the Contractor to be other than the Contractor indicated in the contract will be considered to be incorrect information within the meaning of the "Suspension of Payment" paragraph of the electronic funds transfer (EFT) clause of this contract.
- (3) The Contractor shall not change the name or address for EFT payments or manual payments, as appropriate, in the CCR record to reflect an assignee for the purpose of assignment of claims (see Subpart 32.8, Assignment of Claims). Assignees shall be separately registered in the CCR database. Information provided to the Contractor's CCR record that indicates payments, including those made by EFT, to an ultimate recipient other than that Contractor will be considered to be incorrect information within the meaning of the "Suspension of payment" paragraph of the EFT clause of this contract.
- (4) Offerors and Contractors may obtain information on registration and annual confirmation requirements via the internet at <http://www.ccr.gov> or by calling 1-888-227-2423 or 269-961-5757.

52.212-5 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS--COMMERCIAL ITEMS (MAY 2004)

- (a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clause, which is incorporated in this contract by reference, to implement provisions of law or

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 11 OF 26

## VENDOR:

Executive orders applicable to acquisitions of commercial items:  
52.233-3, Protest after Award (AUG 1996) (31 U.S.C. 3553).

(b) The Contractor shall comply with the FAR clauses in this paragraph (b) that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items: [Contracting Officer check as appropriate.]

- (1) 52.203-6, Restrictions on Subcontractor Sales to the Government (JUL 1995), with Alternate I (OCT 1995) (41 U.S.C. 253g and 10 U.S.C. 2402).
- (2) 52.219-3, Notice of Total HUBZone Set-Aside (JAN 1999) (15 U.S.C. 657a).
- (3) 52.219-4, Notice of Price Evaluation Preference for HUBZone Small Business Concerns (JAN 1999) (if the offeror elects to waive the preference, it shall so indicate in its offer) (15 U.S.C. 657a).
- (4) (i) 52.219-5, Very Small Business Set-Aside (JUNE 2003) (Pub. L. 103-403, section 304, Small Business Reauthorization and Amendments Act of 1994).  
(ii) Alternate I (MAR 1999) of 52.219-5.  
(iii) Alternate II (JUNE 2003) of 52.219-5.
- (5) (i) 52.219-6, Notice of Total Small Business Set-Aside (JUNE 2003) (15 U.S.C. 644).  
(ii) Alternate I (OCT 1995) of 52.219-6.  
(iii) Alternate II (MAR 2004) of 52.219-6.
- (6) (i) 52.219-7, Notice of Partial Small Business Set-Aside (JUNE 2003) (15 U.S.C. 644).  
(ii) Alternate I (OCT 1995) of 52.219-7.  
(iii) Alternate II (MAR 2004) of 52.219-7.
- (7) 52.219-8, Utilization of Small Business Concerns (MAY 2004) (15 U.S.C. 637 (d) (2) and (3)).
- (8) (i) 52.219-9, Small Business Subcontracting Plan (JAN 2002) (15 U.S.C. 637(d) (4)).  
(ii) Alternate I (OCT 2001) of 52.219-9.  
(iii) Alternate II (OCT 2001) of 52.219-9.
- (9) 52.219-14, Limitations on Subcontracting (DEC 1996) (15 U.S.C. 637(a) (14)).
- (10) (i) 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns (JUNE 2003) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323) (if the offeror elects to waive the adjustment, it shall so indicate in its offer).  
(ii) Alternate I (JUNE 2003) of 52.219-23.
- (11) 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting (OCT 1999) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).
- (12) 52.219-26, Small Disadvantaged Business Participation Program--Incentive Subcontracting (OCT 2000) (Pub. L. 103-355, section 7102, and 10 U.S.C. 2323).
- (13) 52.219-27, Notice of Total Service-Disabled Veteran-Owned Small Business Set-Aside (MAY 2004)
- (14) 52.222-3, Convict Labor (JUNE 2003) (E.O. 11755).
- (15) 52.222-19, Child Labor--Cooperation with Authorities and Remedies (JAN 2004) (E.O. 13126).
- (16) 52.222-21, Prohibition of Segregated Facilities (FEB 1999).
- (17) 52.222-26, Equal Opportunity (APR 2002) (E.O. 11246).
- (18) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212).
- (19) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).
- (20) 52.222-37, Employment Reports on Special Disabled

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 12 OF 26

## VENDOR:

- Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (DEC 2001) (38 U.S.C. 4212).
- \_\_\_ (21) (i) 52.223-9, Estimate of Percentage of Recovered Material Content for EPA-Designated Products (AUG 2000) (42 U.S.C. 6962(c)(3)(A)(ii)).  
 \_\_\_ (ii) Alternate I (AUG 2000) of 52.223-9 (42 U.S.C. 6962(i)(2)(C)).
- \_\_\_ (22) 52.225-1, Buy American Act--Supplies (JUNE 2003) (41 U.S.C. 10a-10d).
- \_\_\_ (23) (i) 52.225-3, Buy American Act--Free Trade Agreements--Israeli Trade Act (JAN 2004) (41 U.S.C. 10a-10d, 19 U.S.C. 3301 note, 19 U.S.C. 2112 note), Pub. L. 108-77, 108-78).  
 \_\_\_ (ii) Alternate I (JAN 2004) of 52.225-3.  
 \_\_\_ (iii) Alternate II (JAN 2004) of 52.225-3.
- \_\_\_ (24) 52.225-5, Trade Agreements (JAN 2004) (19 U.S.C. 2501, et seq., 19 U.S.C. 3301 note).
- ✓ (25) 52.225-13, Restrictions on Certain Foreign Purchases (DEC 2003) (E.o.s, proclamations, and statutes administered by the Office of Foreign Assets Control of the Department of the Treasury).
- \_\_\_ (26) 52.225-15, Sanctioned European Union Country End Products (FEB 2000) (E.O. 12849).
- \_\_\_ (27) 52.225-16, Sanctioned European Union Country Services (FEB 2000) (E.O. 12849).
- \_\_\_ (28) 52.232-29, Terms for Financing of Purchases of Commercial Items (FEB 2002) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).
- \_\_\_ (29) 52.232-30, Installment Payments for Commercial Items (OCT 1995) (41 U.S.C. 255(f), 10 U.S.C. 2307(f)).
- ✓ (30) 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration (OCT 2003) (31 U.S.C. 3332).
- \_\_\_ (31) 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration (MAY 1999) (31 U.S.C. 3332).
- \_\_\_ (32) 52.232-36, Payment by Third Party (MAY 1999) (31 U.S.C. 3332).
- \_\_\_ (33) 52.239-1, Privacy or Security Safeguards (AUG 1996) (5 U.S.C. 552a).
- \_\_\_ (34) (i) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (APR 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631).  
 \_\_\_ (ii) Alternate I (APR 1984) of 52.247-64.
- \_\_\_ (c) The Contractor shall comply with the FAR clauses in this paragraph (c), applicable to commercial services, that the Contracting Officer has indicated as being incorporated in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items:  
 [Contracting Officer check as appropriate.]
- \_\_\_ (1) 52.222-41, Service Contract Act of 1965, as Amended (MAY 1989) (41 U.S.C. 351, et seq.).
- \_\_\_ (2) 52.222-42, Statement of Equivalent Rates for Federal Hires (MAY 1989) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).
- \_\_\_ (3) 52.222-43, Fair Labor Standards Act and Service Contract Act--Price Adjustment (Multiple Year and Option Contracts) (MAY 1989) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).
- \_\_\_ (4) 52.222-44, Fair Labor Standards Act and Service Contract Act--Price Adjustment (February 2002) (29 U.S.C. 206 and 41 U.S.C. 351, et seq.).
- \_\_\_ (5) 52.222-47, SCA Minimum Wages and Fringe Benefits

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 13 OF 26

## VENDOR:

Applicable to Successor Contract Pursuant to  
PreDecemberessor Contractor Collective Bargaining  
Agreements (CBA) (May 1989) (41 U.S.C. 351, et seq.).

(d) Comptroller General Examination of Record. The Contractor shall comply with the provisions of this paragraph (d) if this contract was awarded using other than sealed bid, is in excess of the simplified acquisition threshold, and does not contain the clause at 52.215-2, Audit and Records--Negotiation.

(1) The Comptroller General of the United States, or an authorized representative of the Comptroller General, shall have access to and right to examine any of the Contractor's directly pertinent records involving transactions related to this contract.

(2) The Contractor shall make available at its offices at all reasonable times the records, materials, and other evidence for examination, audit, or reproduction, until 3 years after final payment under this contract or for any shorter period specified in FAR Subpart 4.7, Contractor Records Retention, of the other clauses of this contract. If this contract 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. Records relating to appeals under the disputes clause or to litigation or the settlement of claims arising under or relating to this contract shall be made available until such appeals, litigation, or claims are finally resolved.

(3) As used in this clause, records include books, documents, accounting procedures and practices, and other data, regardless of type and regardless of form. This does not require the Contractor to create or maintain any record that the Contractor does not maintain in the ordinary course of business or pursuant to a provision of law.

(e)(1) Notwithstanding the requirements of the clauses in paragraphs (a), (b), (c), and (d) of this clause, the Contractor is not required to flow down any FAR clause, other than those in paragraphs (i) through (vi) of this paragraph in a subcontract for commercial items. Unless otherwise indicated below, the extent of the flow down shall be as required by the clause--

(i) 52.219-8, Utilization of Small Business Concerns (May 2004) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$500,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (April 2002) (E.O. 11246).

(iii) 52.222-35, Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (December 2001) (38 U.S.C. 4212).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (June 1998) (29 U.S.C. 793).

(v) 52.222-41, Service Contract Act of 1965, as Amended (May 1989), flow down required for all subcontracts subject to the Service Contract Act of 1965 (41 U.S.C. 351, et seq.).

(vi) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (April 2003) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631). Flow down required in accordance with paragraph (d) of FAR clause 52.247-64.

(2) While not required, the contractor May include in its subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 14 OF 25

## VENDOR:

## 252.212-7001 CONTRACT TERMS AND CONDITIONS REQUIRED TO IMPLEMENT STATUTES OR EXECUTIVE ORDERS APPLICABLE TO DEFENSE ACQUISITIONS OF COMMERCIAL ITEMS (MAY 2004)

(a) The contractor agrees to comply with the following Federal Acquisition Regulation (FAR) clause which, if checked, is included in this contract by reference to implement a provision of law applicable to acquisitions of commercial items or components.

52.203-3 Gratuities (APR 1984) (10 U.S.C. 2207)

(b) The Contractor agrees to comply with any clause that is checked on the following list of Defense FAR Supplement clauses which, if checked, is included in this contract by reference to implement provisions of law or Executive orders applicable to acquisitions of commercial items or components.

- 252.205-7000 Provision of Information to Cooperative Agreement Holders (DEC 1991) (10 U.S.C. 2416).
- 252.219-7003 Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (DoD Contracts) (APR 1996) (15 U.S.C. 637).
- 252.219-7004 Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (Test Program) (JUN 1997) (15 U.S.C. 637 Note).
- 252.225-7001 Buy American Act and Balance of Payments Program (APR 2003) (41 U.S.C. 10a-10d, E.O. 10582).
- 252.225-7012 Preference for Certain Domestic Commodities (MAY 2004) (10 U.S.C. 2533a).
- 252.225-7014 Preference for Domestic Specialty Metals (APR 2003) (10 U.S.C. 2533a).
- 252.225-7015 Restriction on Acquisition of Hand or Measuring Tools (APR 2003) (10 U.S.C. 2533a).
- 252.225-7016 Restriction on Acquisition of Ball and Roller Bearings (MAY 2004) (\_\_\_ Alternate I) (APR 2003) (10 U.S.C. 2534 and Section 8099 of Pub. L. 104-61) and similar sections in subsequent DoD appropriations acts).
- 252.225-7021 Trade Agreements (JAN 2004) (19 U.S.C. 2501-2518 and 19 U.S.C. 3301 note).
- 252.225-7027 Restriction on Contingent Fees for Foreign Military Sales (APR 2003) (22 U.S.C. 2779).
- 252.225-7028 Exclusionary Policies and Practices of Foreign Governments (APR 2003) (22 U.S.C. 2755).
- 252.225-7036 Buy American Act--Free Trade Agreements--Balance of Payments Program (JAN 2004) (\_\_\_ Alternate I) (JAN 2004) (41 U.S.C. 10a-10d and 19 U.S.C. 3301 note).
- 252.225-7038 Restriction on Acquisition of Air Circuit Breakers (APR 2003) (10 U.S.C. 2534(a)(3)).
- 252.226-7001 Utilization of Indian Organizations, Indian-Owned Economic Enterprises, and Native Hawaiian Small Business Concerns (OCT 2003) (Section 8021 of Pub. L. 107-248).
- 252.227-7015 Technical Data--Commercial Items (NOV 1995) (10 U.S.C. 2320).
- 252.227-7037 Validation of Restrictive Markings on Technical Data (SEP 1999) (10 U.S.C. 2321).
- 252.232-7003 Electronic Submission of Payment Requests (JAN 2004) (10 U.S.C. 2227)
- 252.243-7002 Requests for Equitable Adjustment (MAR 1998) (10 U.S.C. 2410).
- 252.247-7023 Transportation of Supplies by Sea (MAY 2002) (\_\_\_ Alternate I) (MAR 2000) (\_\_\_ Alternate II) (MAR 2000) (Alternate III) (MAY 2002) (10 U.S.C. 2631).

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 15 OF 26

## VENDOR:

— 252.247-7024 Notification of Transportation of Supplies  
by Sea (MAR 2000) (10 U.S.C. 2631).

(c) In addition to the clauses listed in paragraph (e) of the Contract Terms and Conditions Required to Implement Statutes or Executive Orders--Commercial Items clause of this contract (FAR 52.212-5), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

- 252.225-7014 Preference for Domestic Specialty Metals,  
Alternate I (APR 2003) (10 U.S.C. 2533a).
- 252.247-7023 Transportation of Supplies by Sea (MAY 2002)  
(10 U.S.C. 2631)
- 252.247-7024 Notification of Transportation of Supplies  
by Sea (MAR 2000) (10 U.S.C. 2631).

## 52.212-1 INSTRUCTIONS TO OFFERORS--COMMERCIAL ITEMS (JAN 2004)

(a) North American Industry Classification System (NAICS) code and small business size standard. The NAICS code and small business size standard for this acquisition appear in Block 10 of the solicitation cover sheet (SF 1449). However, the small business size standard for a concern which submits an offer in its own name, but which proposes to furnish an item which it did not itself manufacture, is 500 employees.

(b) Submission of offers. Submit signed and dated offers to the office specified in this solicitation at or before the exact time specified in this solicitation. Offers may be submitted on the SF 1449, letterhead stationery, or as otherwise specified in the solicitation. As a minimum, offers must show--

- (1) The solicitation number;
- (2) The time specified in the solicitation for receipt of offers;
- (3) The name, address, and telephone number of the offeror;
- (4) A technical description of the items being offered in sufficient detail to evaluate compliance with the requirements in the solicitation. This may include product literature, or other documents, if necessary;
- (5) Terms of any express warranty;
- (6) Price and any discount terms;
- (7) "Remit to" address, if different than mailing address;

(8) A completed copy of the representations and certifications at FAR 52.212-3;

(9) Acknowledgment of Solicitation Amendments;

(10) Past performance information, when included as an evaluation factor, to include recent and relevant contracts for the same or similar items and other references (including contract numbers, points of contact with telephone numbers and other relevant information); and

(11) If the offer is not submitted on the SF 1449, include a statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation. Offers that fail to furnish required representations or information, or reject the terms and conditions of the solicitation may be excluded from consideration.

(c) Period for acceptance of offers. The offeror agrees to hold the prices in its offer firm for 30 calendar days from the date specified for receipt of offers, unless another time period is specified in an addendum to the solicitation.

(d) Product samples. When required by the solicitation,

## VENDOR:

product samples shall be submitted at or prior to the time specified for receipt of offers. Unless otherwise specified in this solicitation, these samples shall be submitted at no expense to the Government, and returned at the sender's request and expense, unless they are destroyed during preaward testing.

(e) Multiple offers. Offerors are encouraged to submit multiple offers presenting alternative terms and conditions or commercial items for satisfying the requirements of this solicitation. Each offer submitted will be evaluated separately.

(f) Late submissions, modifications, revisions, and withdrawals of offers. (1) Offerors are responsible for submitting offers, and any modifications, revisions, or withdrawals, so as to reach the Government office designated in the solicitation by the time specified in the solicitation. If no time is specified in the solicitation, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that offers or revisions are due.

(2)(i) Any offer, modification, revision, or withdrawal of an offer received at the Government office designated in the solicitation after the exact time specified for receipt of offers is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late offer would not unduly delay the acquisition; and--

(A) If it was transmitted through an electronic commerce method authorized by the solicitation, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of offers; or

(B) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of offers and was under the Government's control prior to the time set for receipt of offers; or

(C) If this solicitation is a request for proposals, it was the only proposal received.

(ii) However, a late modification of an otherwise successful offer, that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(3) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the offer wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(4) If an emergency or unanticipated event interrupts normal Government processes so that offers cannot be received at the Government office designated for receipt of offers by the exact time specified in the solicitation, and urgent Government requirements preclude amendment of the solicitation or other notice of an extension of the closing date, the time specified for receipt of offers will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(5) Offers may be withdrawn by written notice received at any time before the exact time set for receipt of offers. Oral offers in response to oral solicitations may be withdrawn orally. If the solicitation authorizes facsimile offers, offers may be withdrawn via facsimile received at any time before the exact time set for receipt of offers, subject to the conditions specified in the solicitation concerning facsimile offers. An offer may be withdrawn in person by an offeror or its

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 17 OF 26

VENDOR:

authorized representative if, before the exact time set for receipt of offers, the identity of the person requesting withdrawal is established and the person signs a receipt for the offer.

(g) Contract award (not applicable to Invitation for Bids). The Government intends to evaluate offers and award a contract without discussions with offerors. Therefore, the offeror's initial offer should contain the offeror's best terms from a price and technical standpoint. However, the Government reserves the right to conduct discussions if later determined by the Contracting Officer to be necessary. The Government may reject any or all offers if such action is in the public interest; accept other than the lowest offer; and waive informalities and minor irregularities in offers received.

(h) Multiple awards. The Government may accept any item or group of items of an offer, unless the offeror qualifies the offer by specific limitations. Unless otherwise provided in the Schedule, offers may not be submitted for quantities less than those specified. The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit prices offered, unless the offeror specifies otherwise in the offer.

(i) Availability of requirements documents cited in the solicitation. (1)(i) The GSA Index of Federal Specifications, Standards and Commercial Item Descriptions, FPMR Part 101-29, and copies of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained for a fee by submitting a request to--

GSA Federal Supply Service Specifications Section  
Suite 8100  
470 East L'Enfant Plaza, SW  
Washington, DC 20407

Telephone (202) 619-8925  
Facsimile (202) 619-8978.

(ii) If the General Services Administration, Department of Agriculture, or Department of Veterans Affairs issued this solicitation, a single copy of specifications, standards, and commercial item descriptions cited in this solicitation may be obtained free of charge by submitting a request to the addressee in paragraph (i)(1)(i) of this provision. Additional copies will be issued for a fee.

(2) The DoD Index of Specifications and Standards (DoDISS) and documents listed in it may be obtained from the--

Department of Defense Single Stock Point (DoDSSP)  
Building 4, Section D  
700 Robbins Avenue  
Philadelphia, PA 19111-5094

Telephone (215) 697-2667/2179  
Facsimile (215) 697-1462.

(i) Automatic distribution may be obtained on a subscription basis.

(ii) Order forms, pricing information, and customer support information may be obtained--

(A) By telephone at (215) 697-2667/2179; or

(B) Through the DoDSSP Internet site at  
<http://dodssp.daps.mil>.

(3) Nongovernment (voluntary) standards must be obtained

## VENDOR:

from the organization responsible for their preparation, publication, or maintenance.

(j) Data Universal Numbering System (DUNS) Number. (Applies to all offers exceeding \$25,000, and offers of \$25,000 or less if the solicitation requires the Contractor to be registered in the Central Contractor Registration (CCR) database. The offeror shall enter, in the block with its name and address on the cover page of its offer, the annotation "DUNS" or "DUNS +4" followed by the DUNS or DUNS +4 number that identifies the offeror's name and address. The DUNS +4 is the DUNS number plus a 4-character suffix that may be assigned at the discretion of the offeror to establish additional CCR records for identifying alternative Electronic Funds Transfer (EFT) accounts (see FAR Subpart 32.11) for the same parent concern. If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. An offeror within the United States may contact Dun and Bradstreet by calling 1-866-705-5711 or via the internet at <http://www.dnb.com>. An offeror located outside the United States must contact the local Dun and Bradstreet office for a DUNS number.

(k) Central Contractor Registration. Unless exempted by an addendum to this solicitation, by submission of an offer, the offeror acknowledges the requirement that a prospective awardee shall be registered in the CCR database prior to award, during performance and through final payment of any contract resulting from this solicitation. If the Offeror does not become registered in the CCR database in the time prescribed by the Contracting Officer, the Contracting Officer will proceed to award to the next otherwise successful registered Offeror. Offerors may obtain information on registration and annual confirmation requirements via the Internet at <http://www.ccr.gov> or by calling 1-888-227-2423 or 269-961-5757.

(l) Debriefing. If a post-award debriefing is given to requesting offerors, the Government shall disclose the following information, if applicable:

(1) The agency's evaluation of the significant weak or deficient factors in the debriefed offeror's offer.

(2) The overall evaluated cost or price and technical rating of the successful and the debriefed offeror and past performance information on the debriefed offeror.

(3) The overall ranking of all offerors, when any ranking was developed by the agency during source selection.

(4) A summary of the rationale for award;

(5) For acquisitions of commercial items, the make and model of the item to be delivered by the successful offeror.

(6) Reasonable responses to relevant questions posed by the debriefed offeror as to whether source-selection procedures set forth in the solicitation, applicable regulations, and other applicable authorities were followed by the agency.

#### 52.212-3 OFFEROR REPRESENTATIONS AND CERTIFICATIONS-COMMERCIAL ITEMS (MAY 2004)--ALTERNATE I (APR 2002)

(a) Definitions. As used in this provision:

"Emerging small business" means a small business concern whose size is no greater than 50 percent of the numerical size standard for the NAICS code designated.

"Forced or indentured child labor" means all work or service--

(1) Exacted from any person under the age of 18 under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily; or

(2) Performed by any person under the age of 18 pursuant to

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 19 OF 25

VENDOR:

a contract the enforcement of which can be accomplished by process or penalties.

"Service-disabled veteran-owned small business concern"--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a service-disabled veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and size standards in this solicitation.

"Veteran-owned small business concern" means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern" means a small business concern--

(1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

"Women-owned business concern" means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Taxpayer Identification Number (TIN) (26 U.S.C. 6109, 31 U.S.C. 7701). (Not applicable if the offeror is required to provide this information to a central contractor registration database to be eligible for award.)

(1) All offerors must submit the information required in paragraphs (b)(3) through (b)(5) of this provision to comply with debt collection requirements of 31 U.S.C. 7701(c) and 3325(d), reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M, and implementing regulations issued by the Internal Revenue Service (IRS).

(2) The TIN may be used by the Government to collect and report on any delinquent amounts arising out of the offeror's relationship with the Government (31 U.S.C. 7701(c)(3)). If the resulting contract is subject to the payment reporting requirements described in FAR 4.904, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(3) Taxpayer Identification Number (TIN).

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 20 OF 26

## VENDOR:

- TIN: \_\_\_\_\_  
 TIN has been applied for.  
 TIN is not required because:

Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

Offeror is an agency or instrumentality of a foreign government;

Offeror is an agency or instrumentality of the Federal Government.

## (4) Type of organization.

- Sole proprietorship;  
 Partnership;  
 Corporate entity (not tax-exempt);  
 Corporate entity (tax-exempt);  
 Government entity (Federal, State, or local);  
 Foreign government;  
 International organization per 26 CFR 1.6049-4;  
 Other \_\_\_\_\_.

## (5) Common parent.

- Offeror is not owned or controlled by a common parent;  
 Name and TIN of common parent:

Name \_\_\_\_\_  
TIN \_\_\_\_\_

(c) Offerors must complete the following representations when the resulting contract will be performed in the United States or its outlying areas. Check all that apply.

(1) Small business concern. The offeror represents as part of its offer that it  is,  is not a small business concern.

(2) Veteran-owned small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that it  is,  is not a veteran-owned small business concern.

(3) Service-disabled veteran-owned small business concern. [Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (c)(2) of this provision.] The offeror represents as part of its offer that it  is,  is not a service-disabled veteran-owned small business concern.

(4) Small disadvantaged business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, for general statistical purposes, that it  is,  is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(5) Women-owned small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it  is,  is not a women-owned small business concern. Note: Complete paragraphs (c)(6) and (c)(7) only if this solicitation is expected to exceed the simplified acquisition threshold.

(6) Women-owned business concern (other than small business concern). [Complete only if the offeror is a women-owned business concern and did not represent itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents that it  is a women-owned business concern.

(7) Tie bid priority for labor surplus area concerns. If this is an invitation for bid, small business offerors may identify the labor surplus areas in which costs to be incurred on account of manufacturing or production (by offeror or first-tier subcontractors) amount to more than 50 percent of

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 21 OF 28

VENDOR:

the contract price:

(8) Small Business Size for the Small Business Competitiveness Demonstration Program and for the Targeted Industry Categories under the Small Business Competitiveness Demonstration Program. [Complete only if the offeror has represented itself to be a small business concern under the size standards for this solicitation.]

(i) (Complete only for solicitations indicated in an addendum as being set-aside for emerging small businesses in one of the four designated industry groups (DIGs).) The offeror represents as part of its offer that it  is,  is not an emerging small business.

(ii) (Complete only for solicitations indicated in an addendum as being for one of the targeted industry categories (TICs) or four designated industry groups (DIGs).) Offeror represents as follows:

(A) Offeror's number of employees for the past 12 months (check the Employees column if size standard stated in the solicitation is expressed in terms of number of employees); or

(B) Offeror's average annual gross revenue for the last 3 fiscal years (check the Average Annual Gross Number of Revenues column if size standard stated in the solicitation is expressed in terms of annual receipts).

(Check one of the following):

Number of Employees	Average Annual Gross Revenues
<input type="checkbox"/> 50 or fewer	<input type="checkbox"/> \$1 million or less
<input type="checkbox"/> 51--100	<input type="checkbox"/> \$1,000,001--\$2 million
<input type="checkbox"/> 101--250	<input type="checkbox"/> \$2,000,001--\$3.5 million
<input type="checkbox"/> 251--500	<input type="checkbox"/> \$3,500,001--\$5 million
<input type="checkbox"/> 501--750	<input type="checkbox"/> \$5,000,001--\$10 million
<input type="checkbox"/> 751--1,000	<input type="checkbox"/> \$10,000,001--\$17 million
<input type="checkbox"/> Over 1,000	<input type="checkbox"/> Over \$17 million

(9) (Complete only if the solicitation contains the clause at FAR 52.219-23, Notice of Price Evaluation Adjustment for Small Disadvantaged Business Concerns, or FAR 52.219-25, Small Disadvantaged Business Participation Program--Disadvantaged Status and Reporting, and the offeror desires a benefit based on its disadvantaged status.)

(i) General. The offeror represents that either--

(A) It  is,  is not certified by the Small Business Administration as a small disadvantaged business concern and identified, on the date of this representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net), and that no material change in disadvantaged ownership and control has occurred since its certification, and, where the concern is owned by one or more individuals claiming disadvantaged status, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); or

(B) It  has,  has not submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material

## CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 22 OF 26

## VENDOR:

change in disadvantaged ownership and control has occurred since its application was submitted.

(ii)  Joint Ventures under the Price Evaluation Adjustment for Small Disadvantaged Business Concerns. The offeror represents, as part of its offer, that it is a joint venture that complies with the requirements in 13 CFR 124.1002(f) and that the representation in paragraph (c)(9)(i) of this provision is accurate for the small disadvantaged business concern that is participating in the joint venture. [The offeror shall enter the name of the small disadvantaged business concern that is participating in the joint venture: \_\_\_\_\_.]

(10) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents, as part of its offer, that--

(i) It  is,  is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126; and

(ii) It  is,  is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (c)(10)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: \_\_\_\_\_.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(11) (Complete if the offeror has represented itself as disadvantaged in paragraph (c)(4) or (c)(9) of this provision.) The offeror shall check the category in which its ownership falls:

Black American.  
 Hispanic American.  
 Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory or the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

Individual/concern, other than one of the preceding.

(11) HUBZone small business concern. [Complete only if the offeror represented itself as a small business concern in paragraph (c)(1) of this provision.] The offeror represents as part of its offer that--

(i) It  is,  is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns Maintained by the Small Business Administration, and no material change in ownership and control, principal place of ownership, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part

CONTINUATION SHEET

VENDOR:

126; and

(ii) It [ ] is, [ ] is not a joint venture that complies with the requirements of 13 CFR part 126, and the representation in paragraph (c)(11)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating on the joint venture. [The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: \_\_\_\_\_.] Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(d) Representations required to implement provisions of Executive Order 11246--

(1) Previous contracts and compliance. The offeror represents that--

(i) It [ ] has, [ ] has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation; and

(ii) It [ ] has, [ ] has not filed all required compliance reports.

(2) Affirmative Action Compliance. The offeror represents that--

(i) It [ ] has developed and has on file, [ ] has not developed and does not have on file, at each establishment, affirmative action programs required by rules and regulations of the Secretary of Labor (41 CFR parts 60-1 and 60-2), or

(ii) It [ ] has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

(e) Certification Regarding Payments to Influence Federal Transactions (31 U.S.C. 1352). (Applies only if the contract is expected to exceed \$100,000.) By submission of its offer, the offeror certifies to the best of its knowledge and belief that no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence 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 on his or her behalf in connection with the award of any resultant contract.

(f) Buy American Act Certificate. (Applies only if the clause at Federal Acquisition Regulation (FAR) 52.225-1, Buy American Act--Supplies, is included in this solicitation.)

(1) The offeror certifies that each end product, except those listed in paragraph (f)(2) of this provision, is a domestic end product and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products. The terms "component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act--Supplies."

(2) Foreign End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(3) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(g)(1) Buy American Act--Free Trade Agreements--Israeli Trade

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 24 OF 25

VENDOR:

Act Program Certificate. (Applies only if the clause at FAR 52.225-3, Buy American Act--Free Trade Agreements--Israeli Trade Act, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g) (1) (ii) or (g) (1) (iii) of this provision, is a domestic end product and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The terms "component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause of this solicitation entitled "Buy American Act--Free Trade Agreements--Israeli Trade Act."

(ii) The offeror certifies that the following supplies are FTA country end products or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act--Free Trade Agreements--Israeli Trade Act":

FTA Country or Israeli End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(iii) The offeror shall list those supplies that are foreign end products (other than those listed in paragraph (g) (1) (ii) of this provision) as defined in the clause of this solicitation entitled "Buy American Act--Free Trade Agreements--Israeli Trade Act." The offeror shall list as other foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

Other Foreign End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(iv) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25.

(2) Buy American Act--Free Trade Agreements--Israeli Trade Act Certificate, Alternate I (Jan 2004). If Alternate I to the clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g) (1) (ii) for paragraph (g) (1) (ii) of the basic provision:

(g) (1) (ii) The offeror certifies that the following supplies are Canadian end products as defined in the clause of this solicitation entitled "Buy American Act--Free Trade Agreements--Israeli Trade Act":

Canadian End Products:

Line Item No.
_____
_____
_____

(List as necessary)

(3) Buy American Act--Free Trade Agreements--Israeli Trade Act Certificate, Alternate II (Jan 2004). If Alternate II to the

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 25 OF 26

VENDOR:

clause at FAR 52.225-3 is included in this solicitation, substitute the following paragraph (g)(1)(ii) for paragraph (g)(1)(ii) of the basic provision:

(g)(1)(ii) The offeror certifies that the following supplies are Canadian end products or Israeli end products as defined in the clause of this solicitation entitled "Buy American Act--Free Trade Agreements--Israeli Trade Act":

Canadian or Israeli End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(4) Trade Agreements Certificate. (Applies only if the clause at FAR 52.225-5, Trade Agreements, is included in this solicitation.)

(i) The offeror certifies that each end product, except those listed in paragraph (g)(4)(ii) of this provision, is a U.S.-made, designated country, Caribbean Basin country, or FTA country end product, as defined in the clause of this solicitation entitled "Trade Agreements."

(ii) The offeror shall list as other end products those end products that are not U.S.-made, designated country, Caribbean Basin country, or FTA country end products.

Other End Products:

Line Item No	Country of Origin
_____	_____
_____	_____
_____	_____

(List as necessary)

(iii) The Government will evaluate offers in accordance with the policies and procedures of FAR Part 25. For line items subject to the Trade Agreements Act, the Government will evaluate offers of U.S.-made, designated country, Caribbean Basin country, or FTA country end products without regard to the restrictions of the Buy American Act. The Government will consider for award only offers of U.S.-made, designated country, Caribbean Basin country, or FTA country end products unless the Contracting Officer determines that there are no offers for such products or that the offers for such products are insufficient to fulfill the requirements of the solicitation.

(h) Certification Regarding Debarment, Suspension or Ineligibility for Award (Executive Order 12549). (Applies only if the contract value is expected to exceed the simplified acquisition threshold.) The offeror certifies, to the best of its knowledge and belief, that the offeror and/or any of its principals--

(1) [ ] Are, [ ] are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(2) [ ] Have, [ ] have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a Federal, state or local government contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of

CONTINUATION SHEET

DOC. NO. N65540-04-Q-0305

PAGE NO. 26 OF 26

VENDOR:

records, making false statements, tax evasion, or receiving stolen property; and

(3)  Are,  are not presently indicted for, or otherwise criminally or civilly charged by a Government entity with, commission of any of these offenses.

(i) Certification Regarding Knowledge of Child Labor for Listed End Products (Executive Order 13126). [The Contracting Officer must list in paragraph (i)(1) any end products being acquired under this solicitation that are included in the List of Products Requiring Contractor Certification as to Forced or Indentured Child Labor, unless excluded at 22.1503(b).]

(1) Listed end products.

Listed End Product

---

---

Listed Countries of Origin

---

---

(2) Certification. [If the Contracting Officer has identified end products and countries of origin in paragraph (i)(1) of this provision, then the offeror must certify to either (i)(2)(i) or (i)(2)(ii) by checking the appropriate block.]

(i) The offeror will not supply any end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product.

(ii) The offeror may supply an end product listed in paragraph (i)(1) of this provision that was mined, produced, or manufactured in the corresponding country as listed for that product. The offeror certifies that it has made a good faith effort to determine whether forced or indentured child labor was used to mine, produce, or manufacture any such end product furnished under this contract. On the basis of those efforts, the offeror certifies that it is not aware of any such use of child labor.

(End of provision)

**SPECIFICATION NUMBER: TS050-15 Rev -**

**DATE: 28 May 2004**

*N65540-04-Q-0305*

Purchase Specification  
For

**Test Site Load Banks**

**Table Of Contents**

<b>1.0</b>	<b>Introduction .....</b>	<b>4</b>
<b>2.0</b>	<b>Scope .....</b>	<b>4</b>
2.1	Equipment and Services to be Provided by the Supplier.....	4
2.2	Equipment and Services to be Provided by the Government .....	5
<b>3.0</b>	<b>Applicable Documents .....</b>	<b>5</b>
<b>4.0</b>	<b>Release for Manufacture .....</b>	<b>5</b>
<b>5.0</b>	<b>Technical Requirements.....</b>	<b>5</b>
5.1	Load Banks .....	5
5.1.1	General Requirements .....	5
5.1.2	Individual Load Banks Requirements .....	9
5.1.2.1.	450VAC, 3-phase, 60Hz, 400kW Resistive Load Bank...	9
5.1.2.2.	450VAC, 3-phase, 60Hz, 400kW, 300kVAR Resistive/Reactive Load Bank .....	10
5.1.2.3.	375VDC, 800kW Load Bank.....	11
5.1.2.4.	208VAC, 3-phase, 60Hz, 60kW 45kVAR Resistive/Reactive Load Bank .....	12
5.1.2.5.	48VDC, 12kW Load Bank.....	13
5.1.2.6.	650VDC, 800kW load bank .....	14
5.1.3	Testing .....	15
<b>6.0</b>	<b>Technical Data.....</b>	<b>15</b>
6.1	Drawings .....	15
6.2	Technical Manuals .....	15
6.3	Special Tools / Equipment.....	15
6.4	Recommended Maintenance.....	16
6.5	Temperature Profile.....	16
<b>7.0</b>	<b>Inspection and Testing.....</b>	<b>16</b>
<b>8.0</b>	<b>Shipping.....</b>	<b>16</b>
8.1	Packaging .....	16
8.2	Marking .....	16
8.3	Delivery .....	16

**List of Figures**

Item 0001 - Figure 1 .....	18
Item 0002 - Figure 2 .....	19
Item 0003 - Figure 3 .....	20
Item 0004 - Figure 4 .....	21
Item 0005 - Figure 5 .....	21
Item 0006 - Figure 6 .....	21

**1.0 Introduction**

This purchase specification and all document referenced herein contain all of the detailed requirements for (8) load banks to be located outdoors at the Naval Surface Warfare Center, Carderock Division, Ship Systems Engineering Station (NSWCCD-SSES), Philadelphia Naval Base, Philadelphia, PA. These load banks shall be used in performing testing of an Integrated Power System.

**2.0 Scope**

**2.1 Equipment and Services to be Provided by the Supplier:**

The Load Banks shall be suitable for industrial installation and shall be constructed in accordance with the best commercial practices. It shall be the Supplier's responsibility to furnish equipment suitable and complete in details for the services intended. The equipment shall be designed, constructed and tested in accordance with the latest applicable industry standards i.e. UL, National Electric Code, etc. as applicable. The Supplier shall be responsible for delivery of each of the following to NSWCCD-SSES in Philadelphia:

Item	Qty	Description
0001	2	450VAC, 3-phase, 60Hz, 400kW Resistive Load Bank consisting of 4 isolated sections of 100kW, 128A each.(Section 5.1.2.1)
0002	2	450VAC, 3-phase, 60Hz, 400kW, 300kVAR Resistive/Reactive Load Bank consisting of 4 isolated sections of 100kW, 75kVAR, 160A each. (Section 5.1.2.2) (Note: Resistive and Reactive components can be separated into separate units, making the Qty = 4. If separate units are provided, there must be a provision to use resistive load bank cabling terminal to jumper power to the reactive load bank.)
0003	1	375VDC, 900kW Load Bank consisting of 10 isolated sections of 90kW, 240A each. (Section 5.1.2.3)
0004	1	208VAC, 3-phase, 60Hz, 60kW 45kVAR Resistive/Reactive Load Bank consisting of 6 isolated sections of (2) 20kW, 15kVAR, 70A and (4) 5kW, 3.75kVAR, 17.5A each. (Section 5.1.2.4) (Note: Resistive and Reactive components can be separated into separate units, making the Qty = 2. If separate units are provided, there must be a provision to use resistive load bank cabling terminal to jumper power to the reactive load bank.
0005	1	48VDC, 12kW Load Bank consisting of 4 isolated sections of (2) 5kW, 104A and (2) 1kW, 21A each. (Section 5.1.2.5)
0006	1	600VDC, 1020kW load bank consisting of 2 isolated sections of 510kW, 850A each. (Section 5.1.2.6)
0007	1	Release for Manufacture Documentation (Section 4.0)
0008	3	Technical Manual (Section 6.2)

**2.2 Equipment and Services to be Provided by the Government:**

The Government shall install the Load Banks and shall be responsible for the following items:

1. Mounting foundations, structural components and mounting bolts attaching the Supplier furnished equipment to the site structure, and,
2. Associated cabling.

**3.0 Applicable Documents**

1. NFPA 70, National Electric Code, 2002

**4.0 Release for Manufacture**

The Supplier shall submit the following to the Government, for approval, prior to obtaining Drawing Approval:

1. Assembly, Outline Drawings with mounting details and an Electrical Schematic Wiring Diagram for each design.
2. All load bank load ratings and Government cabling capabilities should be clearly identified for each design.
3. Exhaust air temperature flow pattern and temperature profile.
4. List of Special Tools and recommended Spare Parts for each design.
5. Outline for the test specified in Section 5.1.3 for each design.

**5.0 Technical Requirements**

**5.1 Load Banks**

**5.1.1 General Requirements:**

<b>5.1.1.A. Installation Location:</b>	<ol style="list-style-type: none"> <li>1. Outdoor installation.</li> <li>2. Units shall be able to be mounted to a steel platform with open grating approximately 10' above ground.</li> <li>3. Power cable shall be bottom entry.</li> <li>4. Termination compartment shall be provided inside unit and shall be of sufficient size to permit adequate cable bend radius requirements.</li> <li>5. Load bank design shall ensure that proper thermal isolation is provided between resistor compartment and adjacent controls compartment to ensure that cable insulation and control components will not be damaged due to overheating from adjacent Load Banks resistors.</li> </ol>
<b>5.1.1.B. Enclosure Construction:</b>	<ol style="list-style-type: none"> <li>1. Heavy gauge, outdoor, corrosion resistant steel enclosures with manufacturer's standard outdoor coating including a top coat with light gray ANSI 61 paint with a minimum thickness of 2 mil.</li> <li>2. The intake and exhaust openings shall be designed to prevent objects .50" or larger from entering the load bank enclosure.</li> <li>3. The various high temperature areas such as exhaust air openings</li> </ol>

	<p>shall be properly treated and designed so that their protective coating is not destroyed by high temperatures during unit operation.</p> <ol style="list-style-type: none"> <li>4. Access to internal components shall be provided through access panels that prohibit water entry.</li> <li>5. Exhaust airflow shall be through the top of the load bank with an offset from vertical no greater than 30°, or horizontal for resistive load banks rated at 400KW or less. If the exhaust is offset from vertical, it shall be adjustable with a deflector in either direction or exhaust hood must be able to be rotated to adjust direction of exhaust.</li> <li>6. Exterior fasteners shall be stainless steel.</li> <li>7. Fork lift channels or lift eyes for crane installation shall be provided.</li> <li>8. Load bank air intake design shall ensure that insulation resistance is not impacted by operation of load bank in severe weather with heavy rain or snow.</li> </ol>
<p><b>5.1.1.C. Load Elements / Cooling / Heating:</b></p>	<ol style="list-style-type: none"> <li>1. The load elements shall be contained in one or more cases or trays, which can be removed in their entirety as a unit if service ever becomes necessary.</li> <li>2. Anti condensation heaters shall be provided in required areas to prevent damage or malfunction due to moisture. Interlocks and thermostatic controls shall be provided so that heaters operate at desired temperature when load banks are off.</li> <li>3. The load cases shall be constructed and installed to permit removal of one unit without having to remove any other unit.</li> <li>4. Load elements shall be individually serviceable and replaceable in the field without major disassembly of the load bank. The entire length of each element shall be rigidly supported and insulated as required to preclude a broken resistance wire from creating a short circuit to an adjacent wire or ground.</li> <li>5. To guard against hot spots and ensure long term reliability, the load bank shall be designed so that at rated load at nominal voltage, resistors operate at not more than 50% of the maximum continuous temperature rating of the resistance wire used.</li> <li>6. Integral fans shall be provided with associated controls to maintain Load Bank temperatures within the required temperature limits.</li> </ol>
<p><b>5.1.1.D. Control and Monitoring:</b></p>	<ol style="list-style-type: none"> <li>1. The Government will provide a Programmable Logic Controller (PLC) to operate the load segments and monitor the status of cooling fans, temperature switches and air flow. No local control panel is required. The load bank controls shall provide an interposing relay to operate the load segment contactor. The interposing relay shall interface with a PLC dry contact with internally derived 115VAC control power.</li> <li>2. Electrical contactors, fuses / circuit breakers, and protection circuitry shall be panel mounted adjacent to the load cases and within the main enclosure.</li> <li>3. Load Bank protection circuits shall include (as a minimum): Fan Failure/Loss of Cooling Air, Exhaust Air Over-temperature. These fault indications shall be electrically interlocked to isolate the load upon detection of a failure.</li> <li>4. Each load step shall be independently protected by its own branch circuit fuses or breakers and contactors shall be designed</li> </ol>

**SPECIFICATION NUMBER: TS050-15 Rev -  
DATE: 28 May 2004**

	<p>for maximum continuous voltage with maximum resistive/reactive step load.</p> <ol style="list-style-type: none"> <li>Terminal blocks shall be provided for Government control circuit interfaces.</li> <li>Auxiliary contacts shall be provided for all load bank contactors to provide position status for the Government remote PLC. The auxiliary contacts shall be wired to terminals boards for control circuit interfaces.</li> <li>Dry contacts shall be provided for remote indication of Control Power Available, Fan On/Off Status, Fan Failure/Loss of Cooling Air and Overtemperature.</li> <li>Control cable access shall be from the bottom of the units with adequate separation from the power cable entry.</li> </ol>
<b>5.1.1.E. Bus Bars:</b>	<ol style="list-style-type: none"> <li>Bus bars utilized shall be copper with silver or tin plating at contact points to reduce corrosion.</li> </ol>
<b>5.1.1.F. Grounding:</b>	<ol style="list-style-type: none"> <li>Provision for grounding IAW NEC Article 250 shall be provided.</li> <li>An internal connection shall be provided for grounding to the equipment ground conductor as well as bonding to the metal platform to which the load banks will be mounted with the largest cable specified for each unit in 5.1.2</li> </ol>
<b>5.1.1.G. Wiring:</b>	<ol style="list-style-type: none"> <li>All wiring shall be copper type conductor with a minimum of 90°C insulation.</li> <li>High temperature wire is required in the vicinity of heater elements.</li> </ol>
<b>5.1.1.H. Nameplate:</b>	<ol style="list-style-type: none"> <li>The nameplate shall be securely fastened with screws or rivets to the exterior of the enclosure and shall include the following: manufacturer, date, Contract Number and electrical ratings.</li> </ol>
<b>5.1.1.I. Marking:</b>	<ol style="list-style-type: none"> <li>Terminals &amp; wires shall be permanently labeled with markings that remain visible after connections are made.</li> <li>AC bus bars shall indicate phases A, B, and C.</li> <li>DC bus bars shall be labeled + and -.</li> <li>Parts such as relays, transformers, fuses, meters, etc. shall be supplied with identifying nameplates or labels.</li> </ol>
<b>5.1.1.J. Maintainability:</b>	<ol style="list-style-type: none"> <li>Parts that may require servicing, repair or replacement shall be readily accessible.</li> <li>Materials and components shall be of a type, class and form that are readily available from normal sources of supply. Part Numbers and ordering information shall be provided in Technical Manual for future reordering.</li> </ol>
<b>5.1.1.K. Operating Temperature:</b>	<ol style="list-style-type: none"> <li>Ambient temperature is not expected to exceed 40°C. However, the Load Bank shall be conservatively designed for continuous operation in an ambient temperature range of -20°C to 50°C (-4°F to 122°F).</li> </ol>
<b>5.1.1.L. Safety:</b>	<ol style="list-style-type: none"> <li>Equipment shall be designed and constructed in a way that will ensure the safety of operating and maintenance personnel.</li> <li>When the equipment is properly installed and the enclosure is grounded, there shall be no accessible way for operating</li> </ol>

	<p>personnel to receive an electric shock even though an internal fault between two circuits, between a circuit and a structural member or between any circuit and ground may exist.</p> <ol style="list-style-type: none"><li>3. The design shall hold to a practical minimum the possibility of personnel being exposed to electric shock while servicing, adjusting or checking out the equipment.</li><li>4. When unavoidable, positive protection in the form of a guard shall be provided.</li><li>5. Sharp corners and projections which may cause injury or on which clothing may catch shall be avoided.</li><li>6. Equipment shall be designed to revert to its least hazardous condition or mode of operation upon failure of a circuit or part. The design shall be such that should failure occur, any resulting damage will be confined to the smallest equipment subdivision (minimum replaceable part or subassembly) within which failure occurred.</li></ol>
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**5.1.2 Individual Load Bank Requirements:**

<b>5.1.2.1.</b>	<b>Item 0001:</b> 450VAC, 3-phase, 60Hz, 400kW Resistive Load Bank with four isolated sections of 100kW, 128A each:
<b>5.1.2.1.A. Power Cable Entry &amp; Rating Item 1</b>	<ol style="list-style-type: none"> <li>1. Allowance shall be made for Government provided (4) 4/C-4/0 copper conductor, commercial cable rated at 202A/conductor in a 40°C ambient to enter from under unit into the Load Bank termination compartment.</li> <li>2. Termination capability shall be provided inside unit for one cable to be connected to each isolated load bank section. Note: 4<sup>th</sup> conductor of each cable is for grounding.</li> <li>3. Overall power cable outer diameter is expected to be 1.8" to 1.9".</li> </ol>
<b>5.1.2.1.B. Power Rating / Load Steps:</b>	<ol style="list-style-type: none"> <li>1. 450VAC, 60HZ, 3-phase, 400kW.</li> <li>2. Unit shall be able to withstand 480VAC continuously at full load with ambient temperatures from -20°C to 50°C ambient.</li> <li>3. Four isolated loads shall be provided at 100kW each with load steps of 25, 25, 50kW and a tolerance of 0 to +5% of rated kW at rated voltage.</li> <li>4. Each isolated load bank section shall have internal electrical protection for a source with a short circuit level of up to 100,000A RMS symmetrical available at maximum rated voltage.</li> <li>5. The duty cycle shall be continuous meaning that no cool down period is required between load applications.</li> </ol>
<b>5.1.2.1.C. Enclosure Dimensions</b>	<ol style="list-style-type: none"> <li>1. Enclosure footprint shall not exceed a maximum dimension of 72"L and 48"W. Maximum height shall be 144".</li> </ol>
<b>5.1.2.1.D Metering</b>	<ol style="list-style-type: none"> <li>1. Each 100 kW load segment shall provide a multi-function power meter with capability of monitoring 3-phase Voltage, Current, kW, kVAR, power factor and frequency. The power meter shall have a minimum of four Analog Outputs (0-10VDC or 4-20 mA) and a serial link interface to transmit all monitored variables.</li> </ol>
<b>5.1.2.1.E. Auxiliary Power</b>	<ol style="list-style-type: none"> <li>1. Government provided auxiliary power for the Load Banks will be three phase, 460VAC, 60Hz nominal. The Load Bank auxiliaries (i.e. fans, heaters, &amp; controls) shall be designed to operate from this source. A control transformer shall be provided for 115V power required for heaters and controls.</li> <li>2. The short circuit current available from the Government provided 460vac power source will be 100,000A RMS symmetrical or less.</li> <li>3. The auxiliary power supply Government provided cable will be copper conductor, sized per the NEC for 40 degrees C ambient with conductor temperature not to exceed 75 degrees C.</li> <li>4. The Supplier shall provide the appropriate size connection range for the auxiliary supply cable.</li> </ol>

<b>5.1.2.2.</b>	<b>Item 0002:</b> 450VAC, 3-phase, 60Hz, 400kW, 300kVAR Resistive/ Reactive Load Bank with four isolated sections of 100kW, 75kVAR, 160A each:
<b>5.1.2.2.A. Power Cable Entry &amp; Rating Item 2</b>	<ol style="list-style-type: none"> <li>1. Allowance shall be made for Government provided (4) 4/C-4/0 copper conductor, commercial cable rated at 202A/conductor in a 40°C ambient to enter from under unit into the Load Bank termination compartment.</li> <li>2. Termination capability shall be provided inside unit for one cable to be connected to each isolated load bank section. Note: 4<sup>th</sup> conductor of each cable is for grounding.</li> <li>3. Overall power cable outer diameter is expected to be 1.8" to 1.9".</li> </ol>
<b>5.1.2.2.B. Power Rating / Load Steps</b>	<ol style="list-style-type: none"> <li>1. 450VAC, 60Hz, 3-phase, 400kW, 300kVAR. Resistive/ Reactive</li> <li>2. Unit shall be able to withstand 480VAC continuously at full load with ambient temperatures from -20°C to 50°C ambient.</li> <li>3. Four isolated loads shall be provided at 100kW, 75kVAR each with load steps of 25, 25, 50 kW and 18.75, 18.75, 37.5kVAR and a tolerance of 0 to +5% of rated kW/kVAR at rated voltage.</li> <li>4. Each isolated load bank section shall have internal electrical protection for a source with a short circuit level of up to 100,000A RMS symmetrical available at maximum rated voltage.</li> <li>5. The duty cycle shall be continuous meaning that no cool down period is required between load applications. (Resistive and Reactive components may be in separate units.)</li> </ol>
<b>5.1.2.2.C. Enclosure Dimensions</b>	<ol style="list-style-type: none"> <li>1. Enclosure footprint shall not exceed a maximum dimension of 100"L and 64"W (combined units) or 72"L and 48"W resistive component and 60"W and 60"L reactive component (separate units). Maximum height shall be 144".</li> </ol>
<b>5.1.2.1.D Metering</b>	<ol style="list-style-type: none"> <li>1. Each 100 kW, 75 kVAR load segment shall provide a multi-function power meter with capability of monitoring 3-phase Voltage, Current, kW, kVAR, power factor and frequency. The power meter shall have a minimum of four Analog Outputs (0-10VDC or 4-20 mA) and a serial link interface to transmit all monitored variables.</li> </ol>
<b>5.1.2.2.E. Auxiliary Power</b>	<ol style="list-style-type: none"> <li>1. Government provided auxiliary power for the Load Banks will be three phase, 460VAC, 60Hz nominal. The Load Bank auxiliaries (i.e. fans, heaters, &amp; controls) shall be designed to operate from this source. A control transformer shall be provided for 115V power required for heaters and controls.</li> <li>2. The short circuit current available from the Government provided 460VAC power source will be 100,000A RMS symmetrical or less.</li> <li>3. The auxiliary power supply Government provided cable will be copper conductor, sized per the NEC for 40 degrees C ambient with conductor temperature not to exceed 75 degrees C.</li> <li>4. The Supplier shall provide the appropriate size connection range for the auxiliary supply cable.</li> </ol>

<b>5.1.2.3.</b>	<b>Item 0003:</b> 375VDC, 900kW Load Bank with 10 isolated sections of 90kW, 240A each:
<b>5.1.2.3.A. Power Cable Entry &amp; Rating Item 3</b>	<ol style="list-style-type: none"> <li>1. Allowance shall be made for Government provided (10) 3/C-400 MCM copper conductor, commercial cable rated at 295A/ conductor in a 40°C ambient to enter from under unit into the Load Bank termination compartment.</li> <li>2. Termination capability shall be provided inside unit for two cables to be connected to each isolated load bank section. Note: 3rd conductor of each cable is for grounding.</li> <li>3. Overall power cable outer diameter is expected to be 2.2" to 2.3".</li> </ol>
<b>5.1.2.3.B. Power Rating / Load Steps</b>	<ol style="list-style-type: none"> <li>1. 375VDC 900kW nominal.</li> <li>2. Unit shall be able to withstand 400V continuously at full load with ambient temperatures from -20°C to 50°C ambient.</li> <li>3. Ten isolated loads shall be provided at 90kW each, with the following load resolution:               <ol style="list-style-type: none"> <li>a. 90kW, Quantity = 8</li> <li>b. 90kW with (1) 30kW Step and (1) 60kW Step, Quantity = 2</li> </ol>               Note: Each load shall have a tolerance of 0 to +5% of rated kW at rated voltage.             </li> <li>4. Each isolated load bank section shall have internal electrical protection for a source with a short circuit level of up to 20,000A at maximum rated voltage.</li> <li>5. The duty cycle shall be continuous meaning that no cool down period is required between load applications.</li> </ol>
<b>5.1.2.3.C. Enclosure Dimensions</b>	<ol style="list-style-type: none"> <li>1. Enclosure footprint shall not exceed a maximum dimension of 60"L and 40"W. Maximum height shall be 144".</li> </ol>
<b>5.1.2.3.D. Auxiliary Power</b>	<ol style="list-style-type: none"> <li>1. Government provided auxiliary power for the Load Banks will be three phase, 460VAC, 60Hz nominal. The Load Bank auxiliaries (i.e. fans, heaters, &amp; controls) shall be designed to operate from this source. A control transformer shall be provided for 115V power required for heaters and controls.</li> <li>2. The short circuit current available from the Government provided 460vac power source will be 100,000A RMS symmetrical or less.</li> <li>3. The auxiliary power supply Government provided cable will be copper conductor, sized per the NEC for 40 degrees C ambient with conductor temperature not to exceed 75 degrees C.</li> <li>4. The Supplier shall provide the appropriate size connection range for the auxiliary supply cable.</li> </ol>

<b>5.1.2.4.</b>	<b>Item 0004:</b> 208VAC, 3-phase, 60Hz, 60kW 45kVAR Resistive/Reactive Load Bank with 6 isolated sections of (2) 20kW, 15kVAR, 70A and (4) 5kW, 3.75kVAR, 17.5A each:
<b>5.1.2.4.A. Power Cable Entry &amp; Rating Item 4</b>	<ol style="list-style-type: none"> <li>1. Allowance shall be made for Government provided (2) 4C-#3AWG and (4) 4C-#10AWG copper conductor, commercial cable rated at 88A and 31A respectively in a 40°C ambient to enter from under unit into the Load Bank termination compartment.</li> <li>2. Termination capability shall be provided inside unit for one 4C-#3AWG cable to be connected to each 25kVA load bank section and one 4C-#10AWG cable to be connected to each 6.25kVA load bank section. Note: 4<sup>th</sup> conductor of each cable is for grounding.</li> <li>3. Overall power cable outer diameter is expected to be 1.0" to 1.1" and .6" to .7" (respectively).</li> </ol>
<b>5.1.2.4.B. Power Rating / Load Steps</b>	<ol style="list-style-type: none"> <li>1. 208VAC, 60Hz, 3-phase, 60kW, 45kVAR. Resistive/Reactive</li> <li>2. Unit shall be able to withstand 220 VAC continuously at full load with ambient temperatures from -20°C to 50°C ambient.</li> <li>3. Six isolated loads shall be provided: (2) 20kW, 15kVAR and (4) 5kW, 3.75kVAR load sections. The 20kW, 15kVAR load section shall have load resolution of 5, 5 and 10kW and 3.75, 3.75 and 7.5kVAR. A single load segment of 5kW and 3.75kVAR for each 5kW isolated section is required. The load tolerance shall be 0 to +5% of rated kW/kVAR at rated voltage.</li> <li>4. Each isolated load bank section shall have internal electrical protection for a source with a short circuit level of up to 22,000A RMS symmetrical available at maximum rated voltage.</li> <li>5. The duty cycle shall be continuous meaning that no cool down period is required between load applications. (Resistive and Reactive components may be in separate units.)</li> </ol>
<b>5.1.2.4.C. Enclosure Dimensions</b>	<ol style="list-style-type: none"> <li>1. Enclosure footprint shall not exceed a maximum of 100"L and 60"W (combined) or 72"L and 48" W (resistive), 60"L and 60"W (reactive) if separated. Maximum height shall be 144".</li> </ol>
<b>5.1.2.4.D. Auxiliary Power</b>	<ol style="list-style-type: none"> <li>1. Government provided auxiliary power for the Load Banks will be three phase, 460VAC, 60Hz nominal. The Load Bank auxiliaries (i.e. fans, heaters, &amp; controls) shall be designed to operate from this source. A control transformer shall be provided for 115V power required for heaters and controls.</li> <li>2. The short circuit current available from the Government provided 460vac power source will be 100,000A RMS symmetrical or less.</li> <li>3. The auxiliary power supply Government provided cable will be copper conductor, sized per the NEC for 40 degrees C ambient with conductor temperature not to exceed 75 degrees C.</li> <li>4. The Supplier shall provide the appropriate size connection range for the auxiliary supply cable.</li> </ol>

<b>5.1.2.5.</b>	<b>Item 0005:</b> 48VDC, 12kW Load Bank with 4 isolated sections of (2) 5kW, 104A and (2) 1kW, 21A each:
<b>5.1.2.5.A. Power Cable Entry &amp; Rating Item 5</b>	<ol style="list-style-type: none"> <li>1. Allowance shall be made for Government provided (2) 3C-1/0 and (2) 3C-#10AWG copper conductor, commercial cable rated at 132A and 31A (respectively) conductor in a 40°C ambient to enter from under unit into the Load Bank termination compartment.</li> <li>2. Termination capability shall be provided inside unit for one 3C-1/0 cable to be connected to each 5kW load bank section and one 3C-#10awg cable to be connected to each 1kW load bank section. Note: 3<sup>rd</sup> conductor of each cable is for grounding.</li> <li>3. Overall power cable outer diameter is expected to be 1.2" to 1.3" and .5" to .6" (respectively).</li> </ol>
<b>5.1.2.5.B. Power Rating / Load Steps</b>	<ol style="list-style-type: none"> <li>1. 48VDC, 12kW nominal.</li> <li>2. Unit shall be able to withstand 51V continuously at full load with ambient temperatures from -20°C to 50°C ambient.</li> <li>3. 4 isolated loads shall be provided at (2) 5kW and (2) 1kW each with load steps of 5kW for each 5kW isolated load bank section and 1kW for each 1kW isolated load bank section with a tolerance of 0 to 5% of rated kW at rated voltage.</li> <li>4. Each isolated load bank section shall have internal electrical protection for a source with a short circuit level of up to 20,000A.</li> <li>5. The duty cycle shall be continuous meaning that no cool down period is required between load applications.</li> </ol>
<b>5.1.2.5.C. Enclosure Dimensions</b>	<ol style="list-style-type: none"> <li>1. Enclosure footprint should not exceed a maximum dimension of 48"L and 24"W. Maximum height shall be 60".</li> </ol>
<b>5.1.2.5.D. Auxiliary Power</b>	<ol style="list-style-type: none"> <li>1. Government provided auxiliary power for the Load Banks will be 3-phase, 460VAC, 60Hz nominal or 120VAC, 60 Hz, 1-phase. The Load Bank auxiliaries (i.e. fans, heaters, &amp; controls) shall be designed to operate from this source.</li> <li>2. The short circuit current available from the Government provided power source will be 100,000A (for 460V source) or 22,000A (for 120V source) RMS symmetrical or less.</li> <li>3. The auxiliary power supply Government provided cable will be copper conductor, sized per the NEC for 40 degrees C ambient with conductor temperature not to exceed 75 degrees C.</li> <li>4. The Supplier shall provide the appropriate size connection range for the auxiliary supply cable.</li> </ol>

<b>5.1.2.6.</b>	<b>Item 0006:</b> 600VDC, 1020kW load bank with 2 isolated sections of 510kW, 850A each:
<b>5.1.2.6.A. Power cable Entry &amp; Rating Item 6</b>	<ol style="list-style-type: none"> <li>1. Allowance shall be made for Government provided (8) 4C-4/0 copper conductor, commercial cables rated at 161A per conductor in a 40°C ambient to enter from under unit into the Load Bank termination compartment.</li> <li>2. Termination capability shall be provided inside unit for (4) 4/C-4/0 cables for each isolated load section. Note: Two conductors out of sixteen will be used for grounding.</li> <li>3. Overall power cable outer diameter is expected to be 1.8" to 1.9".</li> </ol>
<b>5.1.2.6.B. Power Rating / Load Steps</b>	<ol style="list-style-type: none"> <li>1. 600VDC 1020kW nominal.</li> <li>2. Unit shall be able to withstand 650V continuously at full load with ambient temperatures from -20°C to 50°C ambient.</li> <li>3. Two isolated loads shall be provided at 510 kW each with load steps of 10, 20, 30, 50, 100, 100, and 200kW and a tolerance of 0 to +5% of rated kW at rated voltage.</li> <li>4. Each isolated load bank section shall have internal electrical protection for a source with a short circuit level of up to 20,000A.</li> <li>5. The duty cycle shall be continuous meaning that no cool down period is required between load applications.</li> </ol>
<b>5.1.2.6.C. Enclosure Dimensions</b>	<ol style="list-style-type: none"> <li>1. Enclosure footprint shall not exceed a maximum dimension of 60"L and 80"W. Maximum height shall be 144".</li> </ol>
<b>5.1.2.6.D. Auxiliary Power</b>	<ol style="list-style-type: none"> <li>1. Government provided auxiliary power for the Load Banks will be (3) phase, 460VAC, 60Hz nominal. The Load Bank auxiliaries (i.e. fans, heaters, &amp; controls) shall be designed to operate from this source. A control transformer shall be provided for 115VAC power required for heaters and controls.</li> <li>2. The short circuit current available from the Government provided 460VAC power source will be 100,000A RMS symmetrical or less.</li> <li>3. The auxiliary power supply Government provided cable will be copper conductor, sized per the NEC for 40 degrees C ambient with conductor temperature not to exceed 75 degrees C.</li> <li>4. The Supplier shall provide the appropriate size connection range for the auxiliary supply cable.</li> </ol>

### **5.1.3 Testing**

<b>5.1.3.A. Continuity:</b>	1. Continuity tests shall be performed on all wiring and load bank units as necessary during equipment manufacture.
<b>5.1.3.B. Dielectric Test:</b>	1. The load bank unit and associated auxiliaries shall be hipot tested according to accepted industry standards. 2. Test data shall be documented and shall be shipped with the equipment.
<b>5.1.3.C. Load &amp; Functional Tests:</b>	1. The Load Bank testing shall verify the functionality of each load step and associated controls. 2. All protection features shall be verified through test. 3. Resistance measurements shall be made for each load segment. 4. Load testing of the resistor segments shall be performed at the maximum continuous voltage. Load testing can be waived if the manufacturer can provide documentation to prove that the resistor elements used have been successfully qualified. 5. During testing, the load data shall be recorded from calibrated test equipment to verify proper operation. 6. The load shall be applied for sufficient duration to permit thermal stability, identify loose connections or degraded components prior to shipment. 7. The test data shall be provided in a test report.

## **6.0 Technical Data**

### **6.1 Drawings**

Final Outline, Detail, and Electrical Drawings are required to include the following information: mounting dimensions, rigging features, space limitations, location of center of gravity and load bank weight, customer interface locations, electrical schematics, wiring diagrams, and nameplate data for each design. The drawings shall be included in the Technical Manual (6.2). The Government will also approve the Suppliers Drawings to provide a Release for Manufacture.

### **6.2 Technical Manuals**

Three sets of Technical Manuals, for each design, shall be forwarded not later than the delivery date of the equipment. Technical Manuals shall consist of various technical data including: Drawings (6.1), Special Tools / Equipment (6.3), Recommended Maintenance (6.4), Temperature Profile (6.5), and any other technical information required to install, operate, maintain and troubleshoot the load bank or its accessories.

### **6.3 Special Tools / Equipment**

A list of special tools / equipment required to put the load bank in service shall be provided for Release to Manufacture and shall also be included in the Technical Manual.

#### **6.4 Recommended Maintenance**

Recommendations shall be provided on the maintenance to be performed and the frequency of maintenance actions for the equipment specified in this document. Also, a recommended spare parts list shall be included with the maintenance recommendations. This information shall be provided in the Technical Manual not later than the delivery date of the equipment.

#### **6.5 Temperature Profile**

Exhaust air temperature flow pattern and temperature profile shall be provided for Release to Manufacture and shall also be included in the Technical Manual.

#### **7.0 Inspection and Testing**

Testing of the equipment shall be performed by the Supplier as specified in Section 5.1.3. The Government reserves the right to witness Supplier testing and to perform equipment inspections where such inspections are deemed necessary to assure supplies and services conform to the prescribed requirements. A Test Report, containing as a minimum, the data specified in Section 5.1.3 must be provided no later than the delivery date of the equipment. An outline of the testing which will be performed including voltage level shall be provided for prior to start of testing.

#### **8.0 Shipping**

##### **8.1 Packaging**

Equipment shall be packed for shipping in a manner which will ensure acceptance and safe delivery at destination. Supplier is responsible for damage during shipment.

##### **8.2 Marking**

Each package shall be marked with the Contract Number, Contract Item Number and Purchase Specification Number TS050-15.

##### **8.3 Delivery**

All equipment and technical data specified in this document shall be delivered to NSWCCD-SSES in accordance with the following schedule:

- Item 0001: Within 16 weeks after contract award or within 10 weeks after Drawing Approval, whichever is later.
- Item 0002: Within 16 weeks after contract award or within 10 weeks after Drawing Approval, whichever is later.
- Item 0003: Within 16 weeks after contract award or within 10 weeks after Drawing Approval, whichever is later.

**SPECIFICATION NUMBER: TS050-15 Rev -  
DATE: 28 May 2004**

- Item 0004: Within 16 weeks after contract award or within 10 weeks after Drawing Approval, whichever is later.
- Item 0005: Within 16 weeks after contract award or within 10 weeks after Drawing Approval, whichever is later.
- Item 0006: Within 16 weeks after contract award or within 10 weeks after Drawing Approval, whichever is later.
- Item 0007: Within 4 weeks after contract award.  
Note: NSWC shall be given 2 weeks to review and provide Drawing Approval
- Item 0008: Within 16 weeks after contract award

All deliverables shall be forwarded to the address given below:

Commander  
Naval Surface Warfare Center Carderock Division  
Philadelphia Naval Business Center, Bldg 542  
Philadelphia, PA 19112-5083  
Attn: Ed Harvey, Code 9345

**ITEM 0001 – Load Bank 1**

LB1A 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 21 (1) 4C-4/0
LB1B 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 21 (1) 4C-4/0
LB1C 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 22 (1) 4C-4/0
LB1D 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 22 (1) 4C-4/0

**ITEM 0001 – Load Bank 3**

LB3A 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 31 (1) 4C-4/0
LB3B 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 31 (1) 4C-4/0
LB3C 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC 32 (1) 4C-4/0
LB3D 450VAC, 60HZ, 3-phase, 100kW, 1.0PF, RESISTIVE	ACLC32 (1) 4C-4/0

**Figure 1**

Note: These figures show Load Bank sections and expected power source and cabling to each Load Bank. Auxiliary power cabling is not shown in this figure.

**ITEM 0002 – Load Bank 2**

LB2A 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 21 (1) 4C-4/0
LB2B 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 21 (1) 4C-4/0
LB2C 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 22 (1) 4C-4/0
LB2D 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 22 (1) 4C-4/0

**ITEM 0002 – Load Bank 4**

LB4A 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 31 (1) 4C-4/0
LB4B 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 31 (1) 4C-4/0
LB4C 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 32 (1) 4C-4/0
LB4D 450VAC, 60HZ, 3-phase, 100kW, 75kVAR, 0.8PF, RESISTIVE / INDUCTIVE REACTIVE	ACLC 32 (1) 4C-4/0

**Figure 2**

Note: These figures show Load Bank sections and expected power source and cabling to each Load Bank. Auxiliary power cabling is not shown in this figure.

**ITEM 0003 – Load Bank 5 / 6**

LB5A 375VDC, 90kW, RESISTIVE	DCLC 21/22 (1) 3C-400MCM
LB5B 375VDC, 90kW, RESISTIVE	DCLC 21/22 (1) 3C-400MCM
LB5C 375VDC, 90kW, RESISTIVE	DCLC 21/22 (1) 3C-400MCM
LB5D 375VDC, 90kW, RESISTIVE	DCLC 21/22 (1) 3C-400MCM
LB5E 375VDC, 90kW, RESISTIVE INCLUDES (1) 30kW and (1) 60kW LOAD STEP	DCLC 21/22 (1) 3C-400MCM
LB6A 375VDC, 90kW, RESISTIVE	DCLC 21/32 (1) 3C-400MCM
LB6B 375VDC, 90kW, RESISTIVE	DCLC 31/32 (1) 3C-400MCM
LB6C 375VDC, 90kW, RESISTIVE	DCLC 31/32 (1) 3C-400MCM
LB6D 375VDC, 90kW, RESISTIVE	DCLC 31/32 (1) 3C-400MCM
LB6E 375VDC, 90kW, RESISTIVE INCLUDES (1) 30kW AND (1) 60 kW LOAD STEP	DCLC 31/32 (1) 3C-400MCM

**Figure 3**

Note: These figures show Load Bank sections and expected power source and cabling to each Load Bank. Auxiliary power cabling is not shown in this figure.

**ITEM 0004 – Load bank 7 / 8**

LB7A 208VAC, 60Hz, 3-phase, 20kW, 15kVAR, 0.8PF, RESISTIVE / REACTIVE	SSIM21 (1) 4C-#3AWG
LB7B 208VAC, 60Hz, 3-phase, 5kW, 3.75kVAR, 0.8PF, RESISTIVE / REACTIVE	SSIM22 (1) 4C-#10AWG
LB7C 208VAC, 60Hz, 3-phase, 5kW, 3.75kVAR, 0.8PF, RESISTIVE / REACTIVE	SSIM23 (1) 4C-#10AWG
LB8A 208VAC, 60Hz, 3-phase, 20kW, 15kVAR, 0.8PF, RESISTIVE / REACTIVE	SSIM31 (1) 4C-#3AWG
LB8B 208VAC, 60Hz, 3-phase, 5kW, 3.75kVAR, 0.8PF, RESISTIVE / REACTIVE	SSIM32 (1) 4C-#10AWG
LB8C 208VAC, 60Hz, 3-phase, 5kW, 3.75kVAR, 0.8PF, RESISTIVE / REACTIVE	SSIM33 (1) 4C-#10AWG

**Figure 4**

**ITEM 0005 – Load Bank 9 / 10**

LB9A 48VDC, 5kW, RESISTIVE	SSCM21 (1) 3C-1/0
LB9B 48VDC, 1kW, RESISTIVE	SSCM22 (1) 3C-#10AWG
LB10A 48VDC, 5kW, RESISTIVE	SSCM31 (1) 3C-1/0
LB10B 48VDC, 1kW, RESISTIVE	SSCM32 (1) 3C-#10AWG

**Figure 5**

**ITEM 0006 – Load Bank NL 1 / 2**

LB-NL1 600VDC, 510kW, RESISTIVE	ACLC21 (4) 4C-4/0
LB-NL2 600VDC, 510kW, RESISTIVE	ACLC32 (4) 4C-4/0

**Figure 6**

Note: These figures show Load Bank sections and expected power source and cabling to each Load Bank. Auxiliary power cabling is not shown in this figure.