BID INVITATION FOR: AUTOCLAVE

Unless specifically amended or deleted by the Community College System of New Hampshire, the following General Terms and Conditions apply to this Bid and any resulting Purchase Order or Contract.

GENERAL CONDITIONS AND INSTRUCTIONS:

NATURE OF, AND ELIGIBILITY TO RESPOND. This bid invitation is submitted and the rules promulgated thereunder, and constitutes a firm and binding offer. A bid may not be withdrawn unless permission is obtained from the Community College System of NH (CCSNH).

Bids may be issued only by the Community College System of NH and are not transferable.

SAMPLES AND DEMONSTRATIONS. When samples are required they must be submitted free of costs and will not be returned.

Items left for demonstration or evaluation purposes shall be delivered and installed free of charge and shall be removed at no cost to the CCSNH. Demonstration units shall not be offered to the CCSNH as new equipment.

Bids. Bids must be received at the Community College System of NH before the date and time specified for the opening. Bids must be submitted on this bid form or exact copies and must be typed or clearly printed in ink. Corrections must be initialed. Bids are to be made less Federal Excise Tax and no charge for handling unless required by law.

Bids will be made available to the public after the time of award. Bid results will be given by mail only if requested in writing and accompanied by a self-addressed, stamped business size envelope.

SPECIFICATIONS. Vendors must submit on items as specified. Proposed changes must be submitted in writing and received at the Community College System of NH at least five (5) working days prior to the bid opening. Vendors shall be notified in writing if any changes to the specifications are made.

AWARD. The award will be made to the responsible Vendor submitting a conforming RFB meeting specifications at the lowest cost unless other criteria are noted in the RFB. Unless otherwise noted, the award may be made by individual items.

If there is a discrepancy between the unit price and the extension, the unit price will prevail.

When identical low bids are received the award will be made in accordance with the Administrative Rules.

Discounts will not be considered in making award but may be offered on the Invoice for earlier payment and will be applicable on the date of completion of delivery or receipt of Invoice, whichever is later. On orders specifying split deliveries, discounts will apply on the basis of each delivery or receipt of Invoice, whichever is later.

PATENT INFRINGEMENT. Any responding vendor who has reason to believe that any other responding vendor will violate a patent should such responding vendor be awarded the contract shall set forth in writing, prior to the date and time of opening, the grounds for his belief and a detailed description of the patent.

ASSIGNMENT PROVISION. The responding vendor hereby agrees to assign all causes of action that it may acquire under the antitrust laws of New Hampshire and the United States as the result of conspiracies, combinations, or contracts in restraint of trade which materially affect the price of goods or services obtained by the state under this contract if so requested by the State of New Hampshire.

FEDERAL FUNDS. The Community College System of NH shall assure the continuation or granting of federal funds or other assistance not otherwise provided for by law by following the Federal Procurement Standards.

CCSNH’S OPTIONS: The Community College System of NH reserves the right to reject or accept all or any part of any bid, to determine what constitutes a conforming bid, to award the bid solely as it deems to be in the best interest of the CCSNH, and to waive irregularities that it considers not material to the bid.

PUBLIC INFORMATION: The responding vendor hereby acknowledges that all information relating to this bid and any resulting order (Including but not limited to fees, contracts, agreements and prices) are subject to these laws of the State of New Hampshire regarding public information.

PERSONAL LIABILITY: The responding vendor agrees that in the preparation of this bid or the execution of any resulting contract or order, representatives of the Community College System of NH shall incur no liability of any kind.

PROOF OF COMPLIANCE. The responding vendor may be required to supply proof of compliance with proposal specifications. When requested, the responding vendor must immediately supply the Community College System of NH with certified test results or certificates of compliance. Where none are available, the CCSNH may require independent laboratory testing. All costs for such testing certified test results or certificate of compliance shall be the responsibility of the responding vendor.

FORM OF CONTRACT. The terms and conditions set forth in any additional Terms and Conditions by the Community College System of NH are part of the bid and will apply to any contract awarded the responding vendor unless specific exceptions are taken and accepted and will prevail over any contrary provisions in Terms and Conditions submitted by the responding vendor.

OFFER. The undersigned hereby offers to sell to the Community College System of NH the commodities or services indicated in the following page(s) of this Bid at the price(s) quoted in complete accordance with all conditions of this Bid.

Company Name: __________________________________________

Address: ________________________________________________

Tel#:__________________________________ (Toll free)________________

Fax#:________________________________

Authorized Signature: ______________________________________

__________________________________________________________

(TYPE OR PRINT NAME)

This document must be signed by a person who is authorized to legally obligate the responding vendor. A signature on this document indicates that all State of NH & Community College System of NH terms and conditions are accepted by the responding vendor and that any and all other terms and conditions submitted by the responding vendor are null and void, even if such terms and conditions have terminology to the contrary. The responding vendor shall also be subject to State of New Hampshire/CCSNH terms and conditions as stated on the reverse of the purchase order.
1. The Community College System of NH (CCSNH) engages the firm or individual (“the Vendor”) to perform the services and/or sale of goods, described in the attached CCSNH documents, if any, and the Vendor’s bid or quotation, both of which are incorporated herein by reference.

2. COMPLIANCE BY VENDOR WITH LAWS AND REGULATIONS. In connection with the performance of this agreement, the Vendor shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which shall impose any obligation or duty upon the Vendor, including, but not limited to civil rights and equal opportunity laws.

3. TERM. The contract, and all obligations of the parties thereunder, shall become effective on a specified date and shall be completed in their entirety prior to a specified date. Any work undertaken by the Vendor prior to the effective date shall be at the sole risk and, in the event that the contract shall not become effective, the CCSNH shall be under no obligation to reimburse the Vendor for any such work.

4. CONTRACT PRICE. The contract price, a payment schedule and a maximum limitation of price shall be as specified by the bid invitation and the Vendor’s bid. All payments shall be conditioned upon receipt and approval by the CCSNH, of appropriate vouchers and upon satisfactory performance by the Vendor, as determined by the CCSNH. The payment by the CCSNH of the Contract Price shall constitute complete reimbursement to the Vendor for all expenses of any nature incurred by the Vendor in the performance by the Vendor and complete payment for the Services. The CCSNH shall have no other liability to the Vendor.

5. DELIVERY. If the vendor fails to furnish items and/or services in accordance with all requirements, including delivery, the CCSNH may re-purchase similar items from any other source without competitive bidding, and the original vendor may be liable to the CCSNH for any excess costs.

6. INVOICING. All invoices must show Order Number, Unit and Extension Prices and discounts allowed. A separate invoice shall be submitted for each order. Unless otherwise noted on the invitation to bid or purchase order, payment will not be due until thirty (30) days after all services have been completed, or all items have been delivered, inspected and accepted or the invoice has been received at the agency business office, whichever is later.

7. PERSONNEL.

7.1. The Vendor shall disclose in writing the names of all owners (5% or more), directors, officers, employees, agents or subcontractors who are also officials or employees of the State of New Hampshire/CCSNH. Any change in this information shall be reported in writing within fifteen (15) days of their occurrence.

7.2. The person signing this agreement on behalf of the CCSNH, or his or her delegate (“Contracting Officer”) shall be the CCSNH’s representative for purposes of this agreement. In the event of any dispute concerning the interpretation of this agreement, the Contracting Officer’s decision shall be final.

8. EVENT OF DEFAULT; REMEDIES.

8.1. Any one or more of the following acts or omissions of the Vendor shall constitute an event of default hereunder (“Events of Default”):

8.1.1. failure to deliver the goods or services satisfactorily or on schedule; or

8.1.2. failure to submit any report required hereunder; or

8.1.3. failure to perform any of the other covenants and conditions of this agreement.

8.2. Upon the occurrence of any Event of Default, the CCSNH may take any one, or more, or all, of the following actions:

8.2.1. give the Vendor a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of the notice; and if the Event of Default is not timely remedied, terminate this agreement, effective two (2) days after giving the Vendor notice of termination; and

8.2.2. give the Vendor a written notice specifying the Event of Default and suspending all payments to be made under this agreement and ordering that the portion of the Contract Price, which would otherwise accrue to the Vendor during the period from the date of such notice until such time as the CCSNH determines that the Vendor has cured the Event of Default, shall never be paid to the Vendor; and

8.2.3. set off against any other obligation the CCSNH may owe to the Vendor any damages the CCSNH suffers by reason of any Event of Default; and

8.2.4. treat the agreement as breached and pursue any of its remedies at law or in equity, or both.

9. WAIVER OF BREACH. No failure by the CCSNH to enforce any provisions hereof after any Event of Default shall be deemed a waiver of its rights with regard to that Event, or any subsequent Event. No express failure of any Event of Default shall be deemed a waiver of any provision hereof. No such failure or waiver shall be deemed a waiver of the right of the State to enforce each and all of the provisions hereof upon any further or other default on the part of the Vendor.

10. VENDOR’S RELATION TO THE CCSNH. In the performance of this agreement the Vendor is in all respects an independent contractor, and is neither an agent nor an employee of the CCSNH. Neither the Vendor nor any of its officers, employees, agents or members shall have authority to bind the CCSNH nor are they entitled to any of the benefits, workmen’s compensation or emoluments provided by the CCSNH to its employees.

11. ASSIGNMENT AND SUBCONTRACTS. The Vendor shall not assign, or otherwise transfer any interest in this agreement without the prior written consent of the CCSNH. No work required by this contract shall be subcontracted without the prior written consent of the CCSNH.

12. INDEMNIFICATION. The contractor shall defend, indemnify and hold harmless the State, its officers and employees, from and against any and all losses suffered by the State, its officers and employees, and any and all claims, liabilities or penalties asserted against the State, its officers and employees, by or on behalf of any person, on account of, based on, resulting from, arising out of (or which may be claimed to arise out of) the acts or omissions of the Vendor. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved to the State. This covenant shall survive the termination of this agreement.

12.1 PATENT PROTECTION. The seller agrees to indemnify and defend the State of New Hampshire from all claims and losses resulting from alleged or actual patent infringements and further agrees to hold the CCSNH harmless from any liability arising under RSA 382-A:2-312(3). (Uniform Commercial Code).

13. TOXIC SUBSTANCES. In compliance with RSA 277: A known as the Workers Right to Know Act, the vendor shall provide Material Safety Data Sheets with the delivery of any and all products covered by said law.

14. NOTICE. Any notice by a party hereto to the other party shall be deemed to have been duly delivered or given at the time of mailing by certified mail, postage prepaid, in a United States Post Office addressed to the parties at the addresses given below.

15. AMENDMENT. This agreement may be amended, waived or discharged only by an instrument in writing signed by the parties hereto.

16. CONSTRUCTION OF AGREEMENT AND TERMS. This agreement shall be construed in accordance with the laws of the State of New Hampshire, and is binding upon and inures to the benefit of the parties and their respective successors and assigns.

17. ADDITIONAL PROVISIONS. The additional provisions (if any) have been set forth as Exhibit “A” hereto.

18. ENTIRE AGREEMENT. This agreement, which may be executed in a number of counterparts, each of which shall be deemed an original, constitutes the entire agreement and understanding between the parties, and supersedes all prior agreements and understandings relating hereto.
BID INVITATION FOR:
AUTOCLAVE

INSTRUCTIONS TO BIDDER:
Read the entire bid invitation prior to filling it out. Complete the pricing information in the “Offer” section (the unit price is the price for the unit of purchase required by this bid invitation {i.e. each, case, box, etc.) and all other required information on your offer. The extension is the unit price multiplied by the quantity required by this bid invitation. Also complete the “Bidder Contact Information” section. Finally, complete the company information on the “General Conditions and Instructions” page of this bid invitation, then sign the bid in the space provided on that page.

BID SUBMITAL:
All bids must be submitted on this form or an exact copy, must be typed or clearly printed in ink and must be received on or before the date and time specified on page 1 of this bid. Interested parties may submit a bid to the Community College System of NH, 26 College Dr, Concord NH 03301 by email to purchasing@ccsnh.edu or if needed, may fax to (603)271-2725. All bids must be clearly marked with bid number, date due and purchasing agent’s name.

The Community College System of NH is not responsible for proposals not received due to equipment failure, mail delays, etc. If you want to ensure your proposal was received please verify by calling Kimberly Brent at (603)230-3520.

GOVERNING TERMS AND CONDITIONS:
A responding bid that has been completed and signed by your representative will constitute your company’s acceptance of all State of New Hampshire/CCSNH terms and conditions and will legally obligate your company to these terms and conditions.

A signed response further signifies that any terms and/or conditions that may be or have been submitted by the bidder are specifically null and void and are not a part of this bid invitation or any awarded purchase order, even if said terms and/or conditions contain language to the contrary.

PUBLIC DISCLOSURE:
Any information contained in the bid that a vendor considers confidential must be clearly designated. Marking of the entire bid or entire section of the bid (e.g. pricing) as confidential will neither be accepted nor honored. Notwithstanding any provision of this bid to the contrary, vendor pricing will be subject to public disclosure upon the effective date of all resulting contracts or purchase orders.

Generally, each bid shall become public information upon the effective date of all resulting contracts or purchase orders; however, to the extent consistent with applicable state and federal law and regulations, as determined by the State, including, but not limited to, RSA Chapter 91-A (Right to Know Law), the State/CCSNH shall endeavor to maintain the confidentiality of portions of the bid that is clearly and properly marked confidential. If a request is made to CCSNH to view portions of a bid that a vendor has properly and clearly marked as confidential, CCSNH will notify vendor of the request and of the date that CCSNH plans to release the records. By submitting a bid, vendors agree that unless the vendor obtains a court order, at its sole expense, enjoining the release of the requested information, CCSNH may release the requested information on the date specified in the CCSNH’s notice without liability to the vendors.

PURPOSE:
The purpose of this bid invitation is to establish contract in the form of a purchase order for supplying Community College System of NH with the item(s) indicated in the “Offer” section of this bid invitation, in accordance with the requirements of this bid invitation and any resulting order. This will be a one-time order with delivery required to the location indicated in the F.O.B. section of this bid invitation.
VENDOR CERTIFICATIONS:
All bidders must be duly registered as a vendor authorized to conduct business in the State of New Hampshire.

- The winning bidder must have a completed alternate W-9 on file with the Community College System of NH. If the winning bidder does not have a completed alternate W-9 on file, they will be required to completely fill the alternate W-9 and return to CCSNH before a purchase order will be issued.

- The vendor who is awarded the contract must comply with the terms of the purchase order and of the TAACCCT grant. Prospective bidders are encouraged to ensure they are able to comply with all applicable regulations. Compliance regulations are indicated further down in the document under the header COMPLIANCE BY BIDDER WITH LAWS AND REGULATIONS.

BID INQUIRIES:
Any questions must be submitted by an individual authorized to commit their organization to the Terms and Conditions of this bid. Submissions must clearly identify the Bid Number, the Vendor’s name and address and the name of the person submitting the question.

SPECIFICATION COMPLIANCE:
The manufacturer(s) and/or model(s) indicated are representative of the type and quality required. You may bid different make(s) and model(s), however, your offer must be materially similar to the one(s) indicated. The Community College System of NH shall be the sole determining factor of what is materially similar to the required item(s).

If there are any specifications indicated in this bid invitation, they will be considered the minimum requirements. Bidder's offer must meet or exceed these minimum requirements. The State of New Hampshire shall be the sole determining factor of what meets or exceeds any specification.

Unless otherwise specified by the Community College System of NH in this bid invitation document, all equipment offered by the bidder must be new; shall not be used, rebuilt, refurbished; shall not have been used as demonstration equipment, and shall not have been placed anywhere for evaluation purposes.

CHANGES:
Any requested changes to this bid invitation by the bidder must be received in writing at the Community College System of NH no later than 4:30 PM on the fifth Community College System of NH business day prior to the date of the bid opening.

ADDENDUM:
In the event it becomes necessary to add or revise any part of this bid prior to the schedules submittal date, CCSNH will post on our website any addenda. Before your submission, always check the site for any addenda or other materials that may have been issued affecting the bid. The website address is www.ccsnh.edu/bidding

BID PRICES:
Bid prices must be in US dollars and must include delivery and all other costs required by this bid invitation. Bid prices should result in prices that are no higher than those charged to the bidder’s best/preferred customer. Special charges, surcharges, or fuel charges of any kind (by whatever name) may not be added on at any time. Any and all charges must be built into your bid price at the time of the bid.

WARRANTY REQUIREMENTS:
Successful bidder shall be required to warranty all of the equipment awarded to him for a period of not less than the manufacturer’s standard period of time, from the date the items are received, inspected and accepted by the Community College System of New Hampshire. The warranty shall cover 100% of all parts, shipping, labor, travel, lodging and expenses.

COMPLIANCE BY BIDDER WITH LAWS AND REGULATIONS:
In connection with the performance of the purchase order, the winning bidder shall comply with all statutes, laws, regulations, and orders of federal, state, county or municipal authorities which impose any obligation or duty upon the Contractor, including, but not limited to, civil rights and equal opportunity laws.

In addition, the winning bidder shall comply with all applicable copyright laws.
During the term of any purchase order, the winning bidder shall not discriminate against employees or applicants for employment because of race, color, religion, creed, age, sex, handicap, sexual orientation, or national origin and will take affirmative action to prevent such discrimination.

If the purchase is funded in any part by monies of the United States, the Contractor shall comply with all the provisions of Executive Order No. 11246 of September 24, 1965 entitled “Equal Employment Opportunity”, as amended by Executive Order 11375 of October 13, 1967 and as supplemented in Department of Labor regulations (41C.F.R. Part 60) and with any rules, regulations and guidelines as the State of New Hampshire or the United States shall issue to implement these regulations.

The winning bidder shall allow access by the grantee, the sub-grantee, the Federal agency, the Comptroller General of the United States, or any of the their duly authorized representatives to any books, documents, papers, and records of the bidder which are directly pertinent to that specific contract for the purpose of making audits, examinations, excerpts, and transcripts.

The winning bidder agrees to retain all pertinent records for three years after CCSNH makes final payment and all other pending matters are closed.

**BID AWARD:**
The award of the bid will be based upon the total net low bid from the listing of the items indicated in the "Offer" section of this bid invitation. If an award is made it will be in total, in the form of a Community College System of NH Purchase Order.

If upon the award of any bid of multiple items (awarded by line item) it is determined that an order for any particular item would be $500.00 or less, and said item would be the only item on a purchase order, the state reserves the right to award that item to a bidder already receiving an award for multiple items.

**BID RESULTS:**
Bid results may be viewed when available, once the award has been made, on our web site only at: www.ccsnh.edu/bidding under the closed tab (which is at the bottom of the page).

For Vendors wishing to attend the bid opening: **Only the names of the Vendors submitting responses will be made public.**

**TERMINATION:**
The Community College System of NH shall have the right to terminate the purchase contract at any time by giving the successful bidder a thirty (30) day written notice.

**F.O.B.:**
The F.O.B. shall be destination to the following delivery point:

- Great Bay Community College
- Advanced Technology & Academic Center
- 30-32 Lilac Mall
- 5 Milton Rd
- Rochester NH 03867

**REQUISITION NO.:** R0067449

**RETURNED GOODS:**
The successful bidder must resolve all order and invoice discrepancies within five business days from notification. Products returned due to quality issues, duplicate shipments, over-shipments, etc. must be picked up by the successful bidder within five business days of notification with no restocking or freight charges, and must be replaced with specified products or the agency will be refunded/credited for the full purchase price. Unauthorized substitutions for any products are not allowed.

Standard stock products ordered in error by the Community College System of NH must be returned for full credit within fifteen days of receipt. Products must be in re-salable condition (original container, unused) and there will be no restocking fee charged for these products. The using campus will be responsible for any freight charges to return these items to the successful bidder.
OFFER:
Successful bidder hereby offers to sell the required items to the Community College System of NH at the following price(s):

DELIVERED PRICES

<table>
<thead>
<tr>
<th>QTY</th>
<th>UNIT</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>EXTENSION</th>
</tr>
</thead>
</table>

CCSNH will use a 3 step purchasing procedure used by industry, as outlined below:

1. A technical person will go to the manufacturer’s location to inspect the equipment prior to shipping to be sure it meets specifications and operates properly prior to shipping.
2. When the equipment arrives at the CCSNH location a technical person will examine it prior to installation.
3. After installation, the CCSNH technical representative will inspect it once more before receipt is finalized.

1 EA AUTOCLAVE:

1.0 Dimensions:
1.1 Internal working diameter: 2 ft. minimum (less chordal floor area)
   1.1.1 The working diameter as measured at the horizontal centerline of the working area. Insulation is not included.
1.2 Internal working length: 4 ft. minimum.
   1.2.1 The working length as measured from the pressure vessel parting line where the door meets the vessel shell, to the rear wall of the working area.

2.0 Operating Ranges / Loading:
2.1 Minimum operating Pressure Range: 0 - 150 psi
2.2 Minimum Normal Operating Temperature: Ambient – 450°F
2.3 Maximum temperature rating: 500°F
2.4 Minimum steel load: 5 lbs. Maximum Steel load: 250 lbs.
2.5 Minimum aluminum load: 0 lbs. Maximum aluminum load: 200 lbs.
2.6 Minimum composite load: 0 lbs. Maximum composite load: 25 lbs.

3.0 Operating Specifications:
3.1 Heating rate requirements: Variable 0 – 10°F/min.
3.2 Cooling rate requirements: Variable 0 – 10°F/min.
3.3 Temperature control accuracy: +/- 5°F after steady state
3.4 Temperature control uniformity: +/- 5°F after steady state
   3.4.1 Uniformity will be tested with thermocouples at 6” from side, front, and back.
   3.4.2 Uniformity will be tested at 100 psig and 200°F, 350°F, and 400°F.
3.5 Pressure control accuracy: +/- 1 psig after steady state
3.5.1 Accuracy will be tested at 65 and 125 psig.
3.6 Pressure rate requirement: Variable 0 – 10 psig/min.
   3.6.1 Autoclave must be capable of pressurizing from 0 – 150 psig in 15 minutes, based on a supply pressure of 200 psig. Heating will be disabled during test.
3.7 Vacuum control accuracy: +/- 1 “Hg after steady state
   3.7.1 Accuracy will be tested at 5, 10, 15, and 25 “Hg.

4.0 Pressure vessel:
4.1 Max Allowable Pressure Rating: 200 psi
4.2 Normal Operating Pressure Rating: min of 150 psi
4.3 Vessel designed to ASME Section VIII Div 1 of the latest specification
   4.3.1 National Board certified, U-Stamp
4.4 Autoclave Door
   4.4.1 Side hinged with industry standard safeties
      4.4.1.1 Door material will be steel with design to prevent harm to the door seal
      4.4.1.2 Mechanical bar lock.
5.0 Insulation and internal sheet metal:
5.1 Autoclave internally insulated with minimum 3” mineral wool industrial insulation.
   5.1.1 External insulation will not be acceptable.
   5.1.2 Autoclave must meet OSHA “hot surface” guidelines. Any surface above 140°F must be suitably guarded to protect personnel from harm.
      5.1.2.1 Hot piping shall be insulated as required.
   5.2 Internal insulation liner must be 18 GA minimum thickness, aluminized or stainless-steel.

6.0 Floor:
6.1 Floor shall be designed to hold cart and maximum part/tooling load of 250 lbs. This weight will be evenly distributed over [4 wheels]. These wheels will roll over a 2 track or inverted angle arrangement
   6.2 The floor area between the tracks will be designed to accept a 50 LB per square foot load.
   6.3 Inverted angle shall be welded at cart wheel spacing. This will be determined during engineering review.
   6.4 Floor supports shall be designed to allow thermal expansion at max temperatures.
      6.4.1 Any thermally buckled/deformed flooring shall be replaced and re-tested by vendor prior to contract completion and acceptance.

7.0 Air circulation system:
7.1 Internal air circulation shall provide 250 fpm. (Minimum) air speed through the autoclave working area.
7.2 Fan wheel shall be Class III construction, backward-curved (or equivalent) to meet the high-pressure and high-temperature requirements
   7.3 Fan motor shall be located in a pressurized bell housing at the rear of the autoclave.
      7.3.1 A thermocouple shall be mounted inside the housing and wired to the PC control system for monitoring, data-acquisition, and alarming purposes.

8.0 Heating system:
8.1 Internal electric heater shall be provided to meet the heating rate requirements.
8.2 Heater shall be 20 KW/ 480-V/3phase

9.0 Cooling system:
9.1 A stainless-steel exchanger/coil shall be positioned inside the autoclave to facilitate autoclave cooling.
   9.1.1 The coil shall be finned-tube for high efficiency.
   9.1.2 All wetted parts shall be stainless-steel.
   9.1.3 The coil shall provide sufficient cooling capability to meet the cooling rate operating specifications indicated in section 4 of this document.
   9.2 Control valves shall be provided to control cooling rates.
      9.2.1 Main water valve shall be proportioning style, providing variable 0-100% opening based on PC controller demand.
      9.2.2 Air valve and trim water valve shall be controlled independently and concurrently for high-temperature buffered cooling control.
      9.2.2.1 Vendor shall describe in their proposal the buffered cooling algorithm that will be used for high-temperature operation.
   9.3 Closed-loop cooling system:
      9.3.1 Stainless-steel water tank of sufficient capacity to provide cooling rates requested.
         9.3.1.1 Site glass
         9.3.1.2 Thermocouple shall be provided connected to PC controller, for monitoring, data-acquisition, and alarming
         9.3.1.3 Valving for connection to plant water supply for tank fill.
      9.3.2 Water circulation pump, rated for flow requirements of autoclave and fan capsule cooling.
      9.3.3 Water-to-air heat exchanger shall be provided to cool tank water at a sufficient rate to maintain 120°F maximum during full cooling (10°F /min).
      9.3.4 System shall be capable of supporting the autoclave in the ability to cool the parts to a minimum of 150°F before removing the contents.
10.0 Thermocouples:
10.1 One (1) Type-J air temperature thermocouple shall be provided inside autoclave working area.
10.1.1 Thermocouple shall be connected to PC controller for monitoring, data-acquisition, control, and alarm purposes.
10.1.2 Thermocouple shall be 1/8” stainless steel (minimum) sheathed, ungrounded with exposed tip.
10.2 One (1) Type-J hi-limit temperature thermocouple shall be provided near the autoclave heater.
10.2.1 Thermocouple shall be connected directly to the hi-limit controller device for indication and alarm purposes.
10.2.2 Thermocouple shall be 1/8” stainless steel (minimum) sheathed, ungrounded with exposed tip.
10.3 Four (4) circuit, Type-J jack panel shall be provided inside the autoclave.
10.3.1 Jacks shall be rated for continuous operation at 500°F minimum.
10.3.2 Each jack shall be connected to the PC controller for monitoring, data-acquisition, control, and alarm purposes.
10.3.3 Conax TG glands shall be provided for pressure vessel sealing of wires.
10.3.3.1 Special limits (JJ); high-temperature wire shall be utilized between jack panel and external vessel termination.

11.0 Pressure system:
11.1 Pressure control valves shall be provided to meet the control pressure accuracy and pressure rate requirements set forth in section 4.
11.1.1 Proportional operating Inlet valve shall be sized to meet the rate requirements based on a source of 200 psig.
11.1.1.1 Valve shall be normally-closed operation.
11.2 Pressure transducer shall be connected to the PC controller for monitoring, data-acquisition, control, and alarming.
11.2.1 Range shall be 0-250 psig minimum.
11.2.2 Transducer accuracy: ¼% or better.
11.2.3 3-way calibration valve shall be provided for connecting external calibration source to transducer.
11.3 Pressure gauge shall be provided in site of door/ring hydraulic valves.
11.3.1 Range shall be 0-250 psig minimum.
11.3.2 Gauge accuracy: ¼% or better.
11.4 An exhaust silencer shall be provided to meet OSHA noise guidelines during full depressurization.
11.4.1 Silencer shall be designed and constructed for the temperature and flow service expected.

12.0 Vacuum system:
12.1 Oil-seal vacuum pump shall be provided by vendor
12.1.1 15 ACFM minimum capacity (Typically allow for 2-3 ft² / minute per vacuum source port)
12.1.2 Capable of 29”Hg ultimate vacuum (sea-level)
12.2 Control receiver tank
12.2.1 Receiver shall be controlled by PC controller between 0 – 29”HG at the requested vacuum accuracy in Section 4.
12.2.1.1 Ramping control of vacuum shall be provided in software.
12.2.2 Vacuum transducer shall be connected to the PC controller for monitoring, data-acquisition, control, and alarming.
12.2.2.1 Range shall be 0-30” Hg minimum.
12.2.2.2 Transducer accuracy: ¼% or better.
12.2.2.3 3-way calibration valve shall be provided for connecting external calibration source to transducer.
12.2.3 Electrical control valves for Vac Draw and Vent shall be connected to the PC controller for regulation of receiver tank.
12.2.4 Tank shall be connected to autoclave vacuum header.
12.3 Two (2) vacuum source lines shall be provided inside autoclave to draw vacuum from bagged parts.
12.3.1 Each line shall be ½” pipe through pressure vessel.
12.3.1.1 Pipe shall be removable (not welded to vessel) in case of damage.
12.3.1.2 Pipe shall include a ½” male NPT on inside.
12.3.2 External connections shall be stainless-steel tubing.
12.3.3 Each line shall include an external, electro-pneumatic ball valve for connection to VAC header. Valve shall be selected and controlled by the PC-controller.
12.3.4 Each line shall include an external, electro-pneumatic ball valve connection to VENT header. Valve shall be selected and controlled by the PC-controller.
12.3.5 Each line shall include a high-pressure resin filter trap.
12.4 Two (2) vacuum probe lines shall be provided inside autoclave for monitoring of bagged parts.
12.4.1 Each line shall be ¼” pipe through pressure vessel.
   12.4.1.1 Pipe shall be removable (not welded to vessel) in case of damage.
   12.4.1.2 Pipe shall include a ¼” male NPT on inside.
12.4.2 Each line shall include a vacuum/pressure transducer connected to the PC controller for monitoring, data-acquisition, control, and alarming.
   12.4.2.1 Range shall be compound: -30"HG -0-100 psig.
   12.4.2.2 Transducer accuracy: ¼% or better.
   12.4.2.3 Transducer must have proof pressure of 200 psig minimum.
   12.4.2.4 3-way calibration valve shall be provided for connecting external calibration source to transducer.
12.5 Vacuum integrity tests
   12.5.1 Tests will occur after each probe line is attached to its source line with tubing or hose.
   12.5.2 Test #1: With all source lines to VAC position and vacuum receiver evacuated to 28” minimum, system may not leak more than 3”Hg in 15 minutes.
   12.5.3 Test #2: With all source lines to VAC position and vacuum receiver evacuated to 28” minimum, shut OFF all vacuum source lines. Probe readings shall not drop more than 2”Hg in 5 minutes.
   12.5.4 System will not be accepted until both tests pass.

13.0 **Power System:**
13.1 Nema-12 enclosure, minimum.
13.2 Power enclosure/system shall be UL certified and UL marked. If system is not assembled by a UL certified shop, than alternate inspection and marking by a recognized testing laboratory will be acceptable.

14.0 **Control System:**
14.1 Nema-12 enclosure, minimum.
14.2 Control enclosure/system shall be UL certified and UL marked. If system is not assembled by a UL certified shop, than alternate inspection and marking by a recognized testing laboratory will be acceptable.
14.3 A hi-limit temperature controller will be provided for heat contactor interlock and alarming in case of autoclave excess temperature.
   14.3.1 The controller shall provide digital display.
14.4 All DC power supplies shall be regulated. Switching power supplies are unacceptable.
14.5 PC controller.
   14.5.1 Dell or equivalent major brand
   14.5.2 Minimum configuration: Pentium IV processor, 2Ghz, 40Gb hard drive, 256Mb RAM, 10/100 Ethernet, Windows XP Pro or 2000, 17” Flat Screen Monitor, CD-Rom, and Floppy drive.
14.6 Report printer, professional series, color inkjet or bubble jet
14.7 UPS (uninterruptible power system).
   14.7.1 Connected to PC, monitor, transducer power supplies, and Control I/O hardware.
   14.7.2 20 minutes battery
14.8 Enclosure or desk surface shall be provided to house the computer, monitor, and printer.
14.9 Control I/O hardware:
   14.9.1 I/O hardware must have sufficient capacity to monitor and control every element of the autoclave. This includes all valves, motors, sensors, transducers, and thermocouples.
   14.9.1.1 Racks shall have 15% spare capacity (future requirements)
   14.9.2 Communications between PC and control hardware shall be Ethernet.
15.0 **Control Software Package:**

15.1 Software must be designed for and operate on Windows XP Professional operating system.

15.2 Software must be a client-server design, supporting multiple concurrent clients.
   15.2.1 Software must be capable of being concurrently monitored and/or controlled by multiple remote, network linked computers without the need of PC Anywhere or other remote-control software package.
   15.2.2 The remote client software operation should not disrupt the local client operation, allowing remote viewing from multiple PCs during normal operation.

15.3 Software must be field-proven in composite or circuit board processing applications.
   15.3.1 Vendor shall provide a minimum of three (3) customer references where proposed software is controlling bonding autoclaves.

15.4 Software license shall include free updates for a minimum 1 year of operation.

15.5 Software license shall include free phone support for a minimum of 1 year operation.

16.0 **Security:**

16.1 Software shall include a configurable security system capable of the following:
   16.1.1 Ability to create user accounts for each operator, supervisor, or engineer.
   16.1.2 Ability to assign specific and independent permissions and restrictions to each user.
   16.1.3 Ability to permit or restrict any software function from any specific user or group of users.
   16.1.4 Ability to track user login and logout operations, including time stamping.

16.2.5 Ability to program an auto-log out after a specific period of operator inactivity.
   16.1.6 Ability to program an auto-log out at specific times during the day (i.e. shift changes)

17.0 **Screens:**

17.1 Customized screens shall be provided for monitoring and control of the equipment.

17.2 The following minimum screens and capabilities shall be provided:
   17.2.1 Main overview screen
   17.2.1.1 Run status
   17.2.1.1.1 Run time
   17.2.1.1.2 Segment time
   17.2.1.1.3 Segment time remaining
   17.2.1.1.4 Recipe being run
   17.2.1.1.5 Segment comment
   17.2.1.2 Process values
   17.2.1.2.1 Air temperature
   17.2.1.2.2 Part temperature setpoint and value
   17.2.1.2.3 Pressure setpoint and value
   17.2.1.2.4 Part Vacuum setpoint and value
   17.2.2 Sensor viewing screen
   17.2.2.1 Ability to view all thermocouple, vacuum, and pressure readings at one time.
   17.2.2.2 Visual indication of sensor status (i.e. enable/disable, alarmed, etc.)
   17.2.2.3 Visual indication of each sensor’s attachment status (i.e. Part #1)
   17.2.3 Trend viewing screen
   17.2.3.1 Ability to view a plotted line representation of selected sensors.
   17.2.3.2 Ability to select any sensor
   17.2.3.2.1 Color
   17.2.3.2.2 Line type
   17.2.3.3 Ability to vertically zoom and/or pan the plotted display
   17.2.3.4 Ability to horizontally zoom and/or pan the plotted display
   17.2.3.5 Ability to change the resolution of plotting and sensor value saving
   17.2.3.6 Ability to save a group of viewed sensors for quick future selection
   17.2.4 Manual operations screen
   17.2.4.1 Ability to take manual control of process.
   17.2.4.2 Any manual changes shall be recorded as an intervention event to the alarm system.
17.2.5 Run operations screen
   17.2.5.1 Enter parts
   17.2.5.2 Select the recipe
   17.2.5.3 Start/Stop the run
   17.2.5.4 Change segments
   17.2.5.5 Manual hold
17.2.6 Reporting screen(s)
   17.2.6.1 View and print past runs
   17.2.6.2 Database query and reporting
   17.2.6.3 SPC reporting
17.2.7 Support screen(s)
   17.2.7.1 Maintenance activities
   17.2.7.2 Database configurations
17.3 Screens shall be easily modified by the user.
   17.3.1 A screen design utility shall be provided.
   17.3.2 Screen design shall be security lockable

18.0 Part Entry:
18.1 Ability to enter information defining each part to be run in the cure cycle
   18.1.1 Ability to enter and record multiple fields for each part:
      18.1.1.1 Forty (40) fields per part (minimum)
      18.1.1.1.1 Fields are user configurable
      18.1.1.2 Model Number
   18.1.2 Ability to select part attachments for each part entered:
      18.1.2.1 Select thermocouples attached to the part
      18.1.2.2 Select vacuum source lines attached to the part
      18.1.2.3 Select vacuum probe lines attached to the part
   18.2 Ability to select a part from a previously defined Part Database listing
      18.2.1 System will automatically enter pre-defined field information
      18.2.2 Ability to link a Recipe to each part database record
         18.2.2.1 Ability for the software to will automatically select and load the linked Recipe upon part selection.
         18.2.2.2 If linked Recipe does not match previously selected Recipe (earlier part entry), warning will be issued to the operator indicating incompatible part.
      18.2.3 Ability to define for each part record photo and graphic (TC connection diagrams) files which will be automatically displayed to the operator upon part selection.
18.3 Ability to pre-batch parts for future runs.
18.4 Ability to print a batch report
   18.4.1 Listing of all parts in load
   18.4.1.1 Listing of all part fields
   18.4.2 Listing of all attachments on each part
   18.4.3 Printing of pre-run leak test results

19.0 Pre-run Integrity Checks:
19.1 Prior to run commencement the system shall perform the following checks (user selectable and configurable):
   19.1.1 Part Entry check
      19.1.1.1 Software checks part database and confirms that each field is entered properly
      19.1.1.1.1 Software confirms character count of specified fields (if configured)
      19.1.1.1.2 Software confirms leading or trailing characters in specified fields (if configured)
      19.1.1.2 Software confirms that unique fields are not duplicated (i.e. serial number)
      19.1.1.3 Software confirms that required fields are not blank (configurable)
   19.1.2 Part Attachment check
      19.1.2.1 Software checks part database and confirms that each part has the minimum number of thermocouples attached to it.
      19.1.2.1.1 For each attached thermocouple, system confirms that the pre-run ambient temperature is valid (configured high/low limits)
      19.1.2.2 Software checks part database and confirms that each part has the minimum number of vacuum source lines attached to it.
20.0  Operating Manuals:
Two (2) sets of operating manuals must be provided by vendor

MAKE:________________________  MODEL:________________________  ITEM #:________________________

COMPLETE TECHNICAL SPECIFICATIONS MUST BE PROVIDED WITH YOUR BID SUBMISSION.

$__________

1  EA  On-Site Installation  $__________

1  EA  On-Site Training: Three (3) days, 8 hours per day for up to 6 people. Pricing must include instructor travel and expenses.  $__________

1  EA  Please list available extended warranties options and the price for each:
_____________________________________________________________
_____________________________________________________________
_____________________________________________________________
_____________________________________________________________
_____________________________________________________________
_____________________________________________________________

If there is an educational discount, please apply.

**BIDDER CONTACT INFORMATION:**
The following information is for this office to be able to contact a person knowledgeable of your bid response, and who can answer questions regarding it:

<table>
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<tr>
<th>Contact Person</th>
<th>Local Telephone Number</th>
<th>Toll Free Telephone Number</th>
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**DELIVERY TIME:**
Note: Delivery is to be accomplished no later than May 31, 2013. However delivery will be accepted sooner but no earlier than March 15, 2013.
**BID RESULTS:**
Bid results may be viewed on our web site at: [http://www.ccsnh.edu/bidding/](http://www.ccsnh.edu/bidding/) click on the Closed Bids Tab. Bid results will be mailed to you if you include a self-addressed envelope with the correct amount of postage on it. Bid results will not be given by telephone.

**ATTACHMENTS:**
The following attachments are an integral part of this bid invitation:

There are no attachments

**Note:** To be considered, bid must be signed on front cover sheet in the space provided.