



**THIS IS NOT
AN ORDER**

REQUEST FOR BIDS/PROPOSALS COVERSHEET
THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Procurement and Contract Services
118 College Drive #5003, Hattiesburg, Mississippi 39406-0001

Date: November 29, 2024

BID No. 25-24

THE UNIVERSITY OF SOUTHERN MISSISSIPPI is considering the purchase of the following item(s). We ask that you submit your bid and retain one copy for your files. Right is reserved to accept or reject any part of your bid. Your quotation will be given consideration if received in Bond Hall, Room 214 on or before:

2:00 p.m. CST

December 18, 2024

Buyer: Deidre Edwards

Name: _____

Company: _____

Address: _____

City/State/Zip: _____

TERMS - Bidder should state terms of sale. Our terms are 2% ten days, net 45 days.

These terms will apply per Mississippi law.

AWARDING CONTRACT - Cash terms will not be used as a basis for awarding contracts; however, the University will accept cash discounts when earned.

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL NET PRICE
		<p>DESCRIPTION</p> <p>BID 25-24</p> <p>RFx: 3160007051</p> <p>POLYMER SCIENCE CHILLER</p> <p>REPLACEMENT</p> <p>PROPOSAL MUST BE RETURNED TO THE UNIVERSITY IN ACCORDANCE WITH THE SPECIFICATIONS. RFP NUMBER AND DATE OF BID OPENING MUST BE SHOWN ON THE OUTSIDE OF THE ENVELOPE IF USING THAT METHOD.</p>		

We quote you as above-F.O.B. The University of Southern Mississippi. Shipment can be made in _____ days from receipt of order. DATE _____ TERMS _____

Return quotation to Procurement Services at above address.

Signature Required _____

The University of Southern Mississippi
Request for Bids # 25-24
Polymer Science Centrifugal Water Chiller Replacement

Introduction

The University of Southern Mississippi (USM) is seeking to procure a replacement Centrifugal Water Chiller for Polymer Science

Specifications

Part 1 – General

1.01 Related Documents

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.02 Summary

- A. Section includes
 1. Packaged, water-cooled, electric-motor-driven centrifugal chillers.
 2. Ancillary equipment such as starters, variable speed drives, and controls.
 3. Factory performance testing.
 4. Field start-up and testing.

1.03 Reference Standards

- A. The latest published edition of a reference shall be applicable to this project unless identified by a specific edition date.
- B. All reference amendments adopted prior to the effective date of this contract shall be applicable to this project.
- C. All materials, installation, and workmanship shall comply with the applicable requirements and standards addressed within the following references:
 1. Conform to ANSI/ASME Boilers and Pressure Vessels Code Section VIII, Division 1 for design and fabrication of pressure vessels for manufacture of tubular heat exchangers and heat exchanger shells as applicable.
 2. ARI Standard 550/590 – Standard for Water Chilling Packages using the Vapor Compression Cycle.
 3. ANSI/ASHRAE Standard 15 – Safety Code for Mechanical Refrigeration.
 4. ANSI/ASHRAE Standard 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings.

1.04 Definitions

- A. COP: Coefficient of performance. The ratio of the rate of heat removal to the rate of energy input, using consistent units for any given set of rating conditions.
- B. DDC: Direct digital control.
- C. EER: Energy-efficient ration. The ratio of the cooling capacity given in terms of Btu/h to the total power input given in terms of watts at any given set of rating conditions.
- D. IPLV: Integrated part-load value. A single-number part-load efficiency figure of merit for a single chiller calculated according to the method defined by AHRI 550/590 and referenced to AHRI standard rating conditions.
- E. kVAR: Kilovolt-ampere reactive.
- F. kW/Ton: The ratio of total power input of the chiller in kilowatts to the net refrigerating capacity in tons at any given set of rating conditions.
- G. NPLV: Nonstandard part-load value. A single-number part-load efficiency figure of merit for a single chiller calculated according to the method defined by AHRI 550/590 and intended for operating conditions other than the AHRI standard rating conditions.
- H. SCCR: Short-circuit current rating.

1.05 Submittals

- A. See Section 230010 Mechanical General Provisions
- B. Submit product data, O&M data, and samples and show item on shop and coordination drawings (where shop and coordination drawings are required) according to the following table.
 - 1. "R" means required
 - 2. "R2" means required only for products and equipment differing for the specified manufacturer and model and for "or equals" where specified.

Item	Product Data	O&M Manual	Samples	Shop Drawing
Chillers	R	R		R
Chiller controls	R	R		
Chiller accessories	R	R		

- C. Product Data: For each type of product.
 - 1. Include refrigerant, rated capacities, operating characteristics, furnished specialties, and accessories.
 - 2. Performance at AHRI standard conditions and at conditions indicated.
 - 3. Performance at AHRI standard unloading conditions.
 - 4. Minimum evaporator flow rate.
 - 5. Minimum condenser flow rate.
 - 6. Refrigerant capacity of chiller.
 - 7. Oil capacity of chiller.

8. Fluid capacity of evaporator, condenser.
 9. Characteristics of safety relief valves.
 10. Minimum entering condenser-fluid temperature.
 11. Performance at varying capacities with constant design condenser-fluid temperature. Repeat performance at varying capacities for different condenser-fluid temperatures from design to minimum in 5 deg F increments.
 12. Force and moment capacity of each piping connection.
- D. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
1. Detail equipment assemblies and indicate dimensions, weights, load distribution, required clearances, method of field assembly, components, and location and size of each field connection.
 2. Wiring Diagrams: For power, signal, and control wiring.
- E. Coordination Drawings:
1. Drawings, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - a. Structural supports.
 - b. Piping roughing-in requirements.
 - c. Wiring roughing-in requirements, including spaces reserved for electrical equipment.
 - d. Access requirements, including working clearances for mechanical controls and electrical equipment, and tube pull and service clearances.
 2. Coordination drawings showing plan, section, and elevation views, drawn to 1/4 scale.
 3. Each view to show screened background with the following:
 - a. Column grids, beams, columns, and concrete housekeeping pads.
 - b. Room layout with walls, floors, and roofs, including each room name and number.
 - c. Equipment and products of other trades that are located in vicinity of chillers and part of final installation, such as lighting, fire-suppression, and plumbing systems.
- F. Certificates: For certification required in "Quality Assurance" Article.
- G. Source quality-control reports.
- H. Field Quality-Control Reports: Startup service reports.
- I. Sample Warranty: For special warranty.

1.06 Maintenance Materials

- A. Tool kit to include the following:
1. A tool kit specially designed by chiller manufacturer for use in servicing chiller(s) furnished.
 2. Special tools required to service chiller components not readily available to Owner service personnel in performing routine maintenance.

3. Lockable case with hinged cover, marked with large and permanent text to indicate the special purpose of tool kit, such as "Chiller Tool Kit." Text size shall be at least 1 inch high.
 4. A list of each tool furnished. Permanently attach the list to underside of case cover. Text size shall be at least 1/2 inch high.
- B. Touch-up Paint: 32-oz. container of paint used for finish coat. Label outside of container with detailed description of paint to allow for procurement of a matching paint in the future.

1.07 Quality Assurance

- A. Factory pressure testing of the chiller condenser and evaporator sections shall be in strict conformance with all applicable sections of the ASME code and shall bear the standard ASME symbol.
- B. All equipment or components of this Section shall meet or exceed the requirements and quality of the items herein specified and as denoted on the Drawings.
- C. Equipment manufacturer shall be a company specializing in manufacture, assembly, and field performance of provided equipment with a minimum of five (5) years, experience.
- D. Design and construction of chiller electrical components shall meet UL 465 requirements and shall have labels appropriately affixed.
- E. UL or ETL listed.
- F. Scheduled equipment performance is minimum capacity required.
- G. Scheduled electrical capacity shall be considered as maximum available.
- H. Units shall be rated in accordance with ARI Standard 550/590.

1.08 Delivery, Storage, and Handling

- A. Comply with manufacturer's installation instructions for rigging, chiller loading, local transportation requirements, unloading, storage, and final setting.
- B. The unit shall be completely assembled, with all main, auxiliary, and control piping installed, controls wired, leak tests completed, air runs tested, and charged with dry nitrogen (2 to 3 psig). The oil charge and miscellaneous materials shall be packed separately. The refrigerant charge shall be shipped concurrently or separately in cylinders for field evacuation and charging of unit.
- C. Protect chiller and controls from physical damage. Leave factory shipping covers in place until installation. The entire unit shall be shrink wrapped prior to shipment. The shrink wrap material shall include an imbedded desiccant to minimize/eliminate internal moisture.

1.09 Warranty

- A. Special Warranty: Manufacturer agrees to repair or replace components of chillers that fail in materials or workmanship within specified warranty period.

1. Extended warranties include, but are not limited to, the following:
 - a. Complete chiller Parts, Labor, and Refrigerant for 5 years.
 - b. The manufacturer shall provide a refrigerant and oil warranty where the chiller manufacturer shall provide replacement refrigerant and oil in event of a refrigerant loss for any reason including a shaft seal leak.
2. Warranty Period: Five years from date of Substantial Completion.
3. Warranty shall be directly from manufacturer, no third party warranty will be accepted.

Part 2 – Products

2.01 Approved Manufacturers

- A. Trane
- B. Daikin Applied
- C. Johnson Controls (York)
- D. Approved Equal

2.02 General

- A. The unit shall be completely factory packaged including evaporator, condenser, compressor, motor, starter (or variable speed drive), lubrication system, control system, and all interconnecting unit piping and wiring.

2.03 Compressor

- A. Description: Single-stage or multistage, variable- or dynamic-displacement, centrifugal-type compressor driven by an electric motor.
- B. Compressor:
 1. Casing: Cast iron, precision ground.
 2. Impeller: High-strength cast-aluminum or cast-aluminum alloy on carbon- or alloy-steel shaft.
- C. Drive: Direct- or gear-drive, open or hermetic design, using an electric motor as the driver.
 1. Gear Drives:
 - a. For chillers with oil-lubricated gear drives, provide single- or double-helical gear design continuously coated with oil while chiller is operating.
 - b. Gears shall comply with American Gear Manufacturer Association standards.
 2. Drive Coupling: For chillers with open drives, provide flexible disc with all-metal construction and no wearing parts to ensure long life without the need for lubrication.

3. Seals: Seal drive assembly to prevent refrigerant leakage.
- D. Compressor Motor:
1. Continuous-duty, squirrel-cage, induction-type, two-pole motor with energy efficiency required to suit chiller energy efficiency indicated.
 2. Motor shall be suitable for use with variable speed drives.
 3. Factory mounted, aligned, and balanced as part of compressor assembly before shipping.
 4. Motor shall be of sufficient capacity to drive compressor throughout entire operating range without overload and with sufficient capacity to start and accelerate compressor without damage.
 5. For chillers with open drives, provide motor with totally enclosed enclosure.
 6. Provide motor with thermistor or RTD in each of three-phase motor windings to monitor temperature and report information to chiller control panel.
 7. Provide motor with thermistor or RTD to monitor bearing temperature and report information to chiller control panel.
- E. Vibration Balance: Balance chiller compressor and drive assembly to provide a precision balance that is free of noticeable vibration over the entire operating range.
1. Overspeed Test: At least 25 percent above design operating speed.
 2. Vibration Limits: Velocities not to exceed 0.15 inches/s and 0.8 mils peak to peak on all axes.
- F. Service: Easily accessible for inspection and service.
1. Compressor's internal components shall be accessible without having to remove compressor-drive assembly from chiller.
 2. Provide lifting lugs or eyebolts attached to casing.
- G. Economizers: For multistage chillers, provide interstage economizers.
- H. Capacity Control: Modulating, variable-inlet, guide-vane assembly combined with hot-gas bypass, if necessary, to achieve performance indicated.
1. Maintain stable operation that is free of surge, cavitation, and vibration throughout range of operation. Configure to achieve most energy-efficient operation possible.
 2. Operating Range: From 100 to 10 percent of design capacity.
 3. Condenser-Fluid Unloading Requirements over Operating Range: Constant design entering condenser-fluid temperature for each 10 percent in capacity reduction.
 4. Chillers with variable-speed controllers shall modulate compressor speed with variable-inlet, guide-vane control to achieve optimum energy efficiency.
 5. Avoid use of hot-gas bypass if other options are available to achieve performance indicated. Apply hot-gas bypass according to ASHRAE/IES 90.1 and governing codes.
- I. Oil Lubrication System: Consisting of pump, filtration, heater, cooler, factory-wired power connection, and controls.
1. Bearings, gears, and other rotating surfaces shall be lubricated at all operating, startup, coast down, and standby conditions, including power failure.
 2. Thermostatically controlled oil heater properly sized to remove refrigerant from

- oil.
3. Oil filter shall be the easily replaceable cartridge type, minimum 0.5-micron efficiency, with means of positive isolation while servicing.
 4. Refrigerant-cooled oil cooler.
 5. Factory-installed and pressure-tested piping with isolation valves and accessories.
 6. Oil compatible with refrigerant and chiller components.
 7. Positive visual indication of oil level.

2.04 Refrigeration

- A. Refrigerant:
 1. Type: Shall be a Class 1 non-flammable, commercially available refrigerant listed acceptable by SNAP (the EPA's Significant New Alternative Policy) with a maximum Global Warming Potential (GWP) of less than 750 such as R-513A, R-514A or R-1233zd(E).
 2. Refrigerants HCFC-123 and HFC-134a are not acceptable.
 3. Compatibility: Chiller parts exposed to refrigerants shall be fully compatible with refrigerants, and pressure components shall be rated for refrigerant pressures.
- B. Refrigerant Flow Control: Manufacturer's standard refrigerant flow-control device satisfying performance requirements indicated.
- C. Pressure Relief Device:
 1. Comply with requirements in ASHRAE 15, ASHRAE 147, and applicable portions of ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.
 2. Select and configure pressure relief devices to protect against corrosion and inadvertent release of refrigerant.
 3. Where dual pressure relief devices are installed in series, provide a sensor with indicator between devices to indicate refrigerant release past first device.
 4. For Chillers Using R-514a: Rupture disc constructed of frangible carbon.
 5. For Chillers Using R-134a: ASME-rated, spring-loaded, pressure relief valve; single- or multiple-reseating type. Pressure relief valve(s) shall be provided for each heat exchanger. Condenser shall have dual valves with one being redundant and configured to allow either valve to be replaced without loss of refrigerant.
- D. Refrigeration Transfer: Provide service valves and other factory-installed accessories required to facilitate transfer of refrigerant from chiller to a remote refrigerant storage and recycling system. Comply with requirements in ASHRAE 15 and ASHRAE 147.
- E. Refrigerant Isolation for Chillers Using R-134a:
 1. Factory install positive shutoff, manual isolation valves in the compressor discharge line to the condenser and the refrigerant liquid line leaving the condenser to allow for isolation and storage of full refrigerant charge in the chiller condenser shell.

2. Suction side of compressor from evaporator shall have an isolation valve to allow for isolation and storage of full refrigerant charge in the chiller evaporator shell.
- F. Purge System:
1. For chillers operating at sub-atmospheric pressures, factory install an automatic purge system for collection and return of refrigerant and lubricating oil and for removal of non-condensables including, but not limited to, water, water vapor, and non-condensable gases.
 2. System shall be of thermal purge design, refrigerant or air cooled, and equipped with a carbon filter that includes an automatic regeneration cycle.
 3. Factory wire to chiller's main power supply and system complete with controls, piping, and refrigerant valves to isolate the purge system from the chiller.
 4. Construct components of noncorrodible materials.
 5. Controls shall interface with chiller control panel to indicate modes of operation, set points, data reports, diagnostics, and alarms.
 6. Efficiency of not more than 0.02 lb. of refrigerant per pound of air when rated according to AHRI 580.
 7. Operation independent of chiller according to ASHRAE 147.

2.05 Evaporator

- A. Description: Shell-and-tube design, with water in tubes and refrigerant surrounding tubes within shell. Shell is separate from condenser.
- B. Shell Material: Carbon-steel rolled plates with continuously welded seams or seamless pipe.
- C. Designed to prevent liquid refrigerant carryover from entering compressor.
- D. Tubes:
 1. Individually replaceable from either end and without damage to tube sheets and other tubes.
 2. Each tube shall be roller expanded into the tube sheets and be individually replaceable.
 3. Material: Copper.
 4. Nominal OD: 1 inch.
 5. Minimum Wall Thickness: 0.025 inch.
 6. External Finish: Manufacturer's standard.
 7. Internal Finish: Enhanced.
- E. End Tube Sheets: Continuously welded to each end of shell; drilled and reamed to accommodate tubes, with positive seal between fluid in tubes and refrigerant in shell.
- F. Intermediate Tube Sheets: Installed in shell and spaced along length of tube at intervals required to eliminate vibration and to avoid contact of tubes resulting in abrasion and wear.
- G. Water Box:
 1. Cast-iron or carbon-steel construction; arranged to provide visual inspection

- and cleaning of tubes from either end without disturbing refrigerant in shell.
2. Marine type for water box with piping connections; standard type for water box without piping connections.
 3. Provide water covers with lifting lugs or eyebolts.
 4. Hinged water boxes on end without piping connections.
 5. Nozzle Pipe Connections: Grooved for mechanical-joint coupling.
 6. Thermistor or RTD temperature sensor factory installed in each nozzle.
 7. Fit each water box with 1-inch drain connection at low point and vent connection at high point, each with threaded plug.
- H. Flow Sensor: See specifications for flow switch hereinafter.

2.06 Condenser

- A. Description: Shell-and-tube design, with water in tubes and refrigerant surrounding tubes within shell. Shell is separate from evaporator.
- B. Shell Material: Carbon-steel rolled plates with continuously welded seams or seamless pipe.
- C. Designed to prevent direct impingement of high-velocity hot gas from compressor discharge on tubes.
- D. Condenser shall have sight glass or other form of positive visual verification of refrigerant charge and condition.
- E. Tubes:
 1. Individually replaceable from either end and without damage to tube sheets and other tubes.
 2. Each tube shall be roller expanded into the tube sheets and be individually replaceable.
 3. Material: Copper.
 4. Nominal OD: 1 inch.
 5. Minimum Wall Thickness: 0.028 inch.
 6. External Finish: Manufacturer's standard.
 7. Internal Finish: Enhanced.
- F. End Tube Sheets: Continuously welded to each end of shell; drilled and reamed to accommodate tubes, with positive seal between fluid in tubes and refrigerant in shell.
- G. Intermediate Tube Sheets: Installed in shell and spaced along length of tube at intervals required to eliminate vibration and to avoid contact of tubes resulting in abrasion and wear.
- H. Water Box:
 1. Cast-iron or carbon-steel construction; arranged to provide visual inspection and cleaning of tubes from either end without disturbing refrigerant in shell.
 2. Marine type for water box with piping connections. Standard type for water box without piping connections.
 3. Water boxes covers shall have lifting lugs or eyebolts.
 4. Hinged water boxes on end without piping connections.

5. Nozzle Pipe Connections: Grooved for mechanical-joint coupling.
 6. Thermistor or RTD temperature sensor factory installed in each nozzle.
 7. Fit each water box with 1-inch drain connection at low point and vent connection at high point, each with threaded plug.
- I. Flow Sensor: See specifications for flow switch hereinafter.

2.07 Performance

- A. Full load performance (kW/Ton) shall be rated in Accordance with AHRI 550/590 and match the scheduled value.
- B. Part load Performance shall match the below requirements at a minimum. All part load performance shall be certified in Accordance with AHRI 550/590
 1. Maximum NPLV shall match the scheduled value.
 2. Chiller shall be capable of unloading to 15% with constant 85 degree entering condenser water and 10% with constant 80 degree entering condenser water. Unloading based on constant gpm condenser flow rate, and constant gpm evaporator flow rate.
 3. Certified AHRI Product Performance report at conditions 1 & 2 above to be provided with equipment submittals.

2.08 Insulation

- A. Closed-cell, flexible elastomeric thermal insulation complying with ASTM C 534, Type I for tubular materials and Type II for sheet materials.
 1. Thickness: 1-1/2 inches.
 - a. 3/4" Factory applied
 - b. 3/4" Field applied
- B. Adhesive: As recommended by insulation manufacturer.
- C. Factory-applied insulation over all cold surfaces of chiller capable of forming condensation. Components shall include, but not be limited to, evaporator shell and end tube sheets, evaporator water boxes including nozzles, refrigerant suction pipe from evaporator to compressor, cold surfaces of compressor, refrigerant-cooled motor, and auxiliary piping.
 1. Apply adhesive to 100 percent of insulation contact surface.
 2. Before insulating steel surfaces, prepare surfaces for paint, and prime and paint as indicated for other painted components. Do not insulate unpainted steel surfaces.
 3. Seal seams and joints to provide a vapor barrier.
 4. After adhesive has fully cured, paint exposed surfaces of insulation to match other painted parts.
 5. Manufacturer has option to factory or field insulate chiller components installed in multiple pieces to reduce potential for damage during installation.
 6. Manufacturer has option to factory or field insulate water boxes and nozzles to reduce potential for damage during installation.

D. Field-Applied Insulation:

1. Components that are not factory insulated shall be field insulated to comply with requirements indicated.
2. Manufacturer shall be responsible for chiller insulation whether factory or field installed, to ensure manufacturer is the single point of responsibility for chillers.
3. Manufacturer factory-authorized service representative shall instruct and supervise installation of field-applied insulation.
4. After field-applied insulation is complete, paint insulation to match factory-applied finish.

2.09 Electrical

- A. Factory installed and wired, and functionally tested at factory before shipment.
- B. Single-point, field-power connection to fused disconnect switch. Minimum short circuit current rating (SCCR) according to UL 508 shall be as required by electrical power distribution system, but not less than 65,000 A.
 1. Branch power circuit to each motor, electric heater, dedicated electrical load, and control, with circuit breaker or disconnect switch having SCCR to match main disconnecting means.
 - a. NEMA KS 1, heavy-duty fusible switch with rejection-type fuse clips rated for fuses. Select and size fuses to provide Type 2 protection according to IEC 60947-4-1.
 - b. NEMA AB 1, motor-circuit protector (circuit breaker) with field-adjustable, short-circuit-trip set point.
 2. NEMA ICS 2-rated motor controller for auxiliary motors, hand-off-auto switch, and overcurrent protection for each motor. Provide variable-speed controller for each variable-speed motor furnished.
 3. Control-circuit transformer with primary and secondary side fuses.
- C. Terminal blocks with numbered and color-coded wiring to match wiring diagram. Spare wiring terminal block for connection to external controls or equipment.
- D. Factory install and wire capacitor bank for the purpose of power factor correction to 0.96 at all operating conditions.
 1. If capacitors are mounted in a dedicated enclosure, use same NEMA enclosure type as that for motor controller. Provide enclosure with service entrance knockouts and bushings for conduit.
 2. Capacitors shall be of non-PCB dielectric fluid, metallized electrode design, with low loss with low-temperature rise. The kVAR ratings shall be indicated and shall not exceed the maximum limitations set by NFPA 70. Provide individual cells as required.
 3. Provide each cell with current-limiting replaceable fuses and carbon-film discharge resistors to reduce residual voltage to less than 50 V within one minute after de-energizing.
 4. Provide a ground terminal and a terminal block or individual connectors for phase connection.

2.10 Variable-Speed Controller

- A. controller shall be factory mounted and wired on the chiller to provide a single-point, field-power termination to the chiller and its auxiliaries.
- B. Description: NEMA ICS 2; listed and labeled according to UL 508 as a complete unit and arranged to provide variable speed by adjusting output voltage and frequency.
- C. Enclosure: Unit mounted, NEMA 250, Type 1, with hinged full-front access door with lock and key.
- D. The chiller shall have a single point wiring connection at the VSD with factory mounted circuit breaker. The chiller shall not require any additional field power connections; include factory installed transformers for all lower voltage devices (e.g. controls) that are provided with the chiller.
- E. Integral Disconnecting Means: NEMA AB 1, instantaneous-trip circuit breaker with lockable handle. Minimum short circuit current rating (SCCR) according to UL 508 shall be as required by electrical power distribution system, but not less than 65,000 A.
- F. Technology: Pulse width modulated (PWM) output with insulated gate bipolar transistors; suitable for variable torque loads.
- G. Controller shall consist of a rectifier converter section, a digital/analog driver regulator section, and an inverter output section.
 - 1. Rectifier section shall be a full-wave diode bridge that changes fixed-voltage, fixed-frequency, ac line power to a fixed dc voltage. Silicon controller rectifiers, current source inverters, and paralleling of devices are unacceptable. Rectifier shall be insensitive to phase rotation of the ac line.
 - 2. Regulator shall provide full digital control of frequency and voltage.
 - 3. Inverter section shall change fixed dc voltage to variable-frequency, variable ac voltage for application to a squirrel-cage motor. Inverter shall produce a sine-coded, PWM output waveform and shall conduct no RFI back to the input power supply.
- H. Output Rating: Three phase, with voltage proportional to frequency throughout voltage range.
- I. Operating Requirements:
 - 1. Input AC Voltage Tolerance: Rated voltage, plus 10 percent.
 - 2. Input frequency tolerance of 60 Hz, plus or minus 2 Hz.
 - 3. Capable of driving full load, without derating, under the following conditions:
 - a. Ambient Temperature: 0 to 104 deg F.
 - b. Relative Humidity: Up to 95 percent (noncondensing).
 - c. Altitude: Up to 3300 feet.
 - 4. Minimum Efficiency: 97 percent at 60 Hz, full load.
 - 5. Minimum Displacement Primary-Side Power Factor: 98 percent with harmonic filter.
 - 6. Overload Capability: 1.05 times the full-load current for seven seconds.
 - 7. Starting Torque: As required by compressor-drive assembly.
 - 8. Speed Regulation: Plus or minus 1 percent.
 - 9. Isolated control interface to allow controller to follow control signal over a 10:1

speed range.

10. To avoid equipment resonant vibrations, provide critical speed lockout circuitry to allow bands of operating frequency at which controller shall not operate continuously.
 11. Capable of being restarted into a motor coasting in either the forward or reverse direction without tripping.
- J. Internal Adjustability Capabilities: Integral to controller or through chiller control panel.
1. Minimum Output Frequency: 6 Hz.
 2. Maximum Output Frequency: 60 Hz.
 3. Acceleration: Two seconds to a minimum of 60 seconds.
 4. Deceleration: Two seconds to a minimum of 60 seconds.
 5. Current Limit: 30 percent to a minimum of 100 percent of maximum rating.
- K. Self-Protection and Reliability Features: Subjecting the controller to any of the following conditions shall not result in component failure or the need for replacement:
1. Overtemperature.
 2. Short circuit at controller output.
 3. Ground fault at controller output. Variable-speed controller shall be able to start a grounded motor.
 4. Open circuit at controller output.
 5. Input undervoltage.
 6. Input overvoltage.
 7. Loss of input phase.
 8. Reverse phase.
 9. AC line switching transients.
 10. Instantaneous overload, line to line or line to ground.
 11. Sustained overload exceeding 100 percent of controller-rated current.
 12. Starting a rotating motor.
- L. Motor Protection: Controller shall protect motor against overvoltage and undervoltage, phase loss, reverse phase, overcurrent, overtemperature, and ground fault.
- M. Automatic Reset and Restart:
1. Capable of three restarts after controller fault or on return of power after an interruption and before shutting down for manual reset or fault correction.
 2. Controller shall be capable of automatic restart on phase-loss and overvoltage and undervoltage trips.
- N. Control Signal Interface:
1. Electric Input Signal Interface: A minimum of two analog inputs (0 to 10 V or 0/4-20 mA) and six programmable digital inputs.
 2. Manufacturer has option to incorporate control signal interface into chiller control panel.
- O. Active Harmonic Distortion Filter:
1. Factory mounted and wired to limit total voltage and current distortion to 5 percent.

- P. Cooling: By one of the following.
 - 1. Refrigerant.
 - 2. Chilled water.
 - 3. Chilled oil cooling system.
 - 4. Ambient air.
 - 5. Condenser water cooling is not acceptable.
 - 6. Cooling system shall be completely factory installed.
 - 7. Energy for other than ambient air cooling shall be included in reported chiller capacity and power ratings.
- Q. Accessories: Devices shall be factory installed in controller enclosure unless otherwise indicated.
 - 1. Control Relays: Auxiliary and adjustable time-delay relays.
- R. Chiller Capacity Control Interface: Equip chiller with adaptive control logic to automatically adjust the compressor motor speed and the compressor pre-rotation inlet vane position independently to achieve maximum part-load efficiency in response to sensor inputs that are integral to the chiller controls.

2.11 Controls

- A. Each unit shall be furnished complete with a digital control system in a lockable enclosure, factory mounted, wired, and tested. The control center shall include a backlit minimum 40 character alphanumeric display showing all system parameters in the English language with numeric data in English units.
- B. Control panel shall not be more than 6 feet in height above the finished floor (including pads, piers and isolation; see the Drawings), or the control panel shall pivot to angle the display downward for ease of operator viewing.
- C. Digital programming of essential setpoints through a color coded, tactile-feel keypad shall include: leaving chilled water temperature; percent current limit; pull-down demand limiting; and remote reset temperature range.
- D. All safety and cycle shutdowns shall be enunciated through the alphanumeric display and consist of day, time, cause of shutdown, and type of restart required. Safety shutdowns (manual restart) shall include: high condenser refrigerant pressure; low evaporator pressure; low evaporator-condenser differential pressure; high oil temperature; low oil pressure; high oil pressure; motor overload, and sensor malfunction. Cycling (automatic restart) shutdowns shall include: low water temperature; cooler/condenser water flow interruption; power fault (loss of power, low voltage); and anti-recycle.
- E. System operating information shall include: return/leaving chilled water temperatures; return/leaving condenser water temperatures; evaporator/condenser refrigerant pressures; differential oil pressure; percent motor current; evaporator/condenser saturation temperatures; compressor discharge temperature; oil temperature; operating hours; and number of compressor starts.
- F. Security access shall be provided to prevent unauthorized changing of setpoints, and to select local or remote control of the chiller, and to allow manual operation of the pre-

rotation vanes and oil pump.

G. Hardwired interface with a Building Automation System (BAS):

1. Remote chiller start/stop.
2. Chiller head pressure control.
3. Condenser and evaporator pump output.
4. Chiller fault (shut down on a safety requiring reset).

H. Network interface with BAS: Factory install hardware and software to enable system to monitor, control, and display chiller status and alarms.

1. Provide a BACnet MS/TP gateway per ASHRAE Standard 135 (BACnet).
2. Include BACnet interface in each chiller.
3. Include all information to and coordination with BAS contractor as required for BAS contractor to map across the following operating and control points.

Description	Type	Device
On/off status	DI	Through network (may also be hardwired)
Alarm	DI or AI	Through network. (May have multiple integer values depending on alarm type – see chiller BACnet panel submittal.)
Call for condenser water pump	DI	Through network
Condenser water flow status	DI	Through network
Call for chilled water pump	DI	Through network
Chilled water flow status	DI	Through network
Chiller in local mode	DI	Through network
Chiller in surge	DI	Through network
Chilled water temperature setpoint reset	AO	Through network (may also be hardwired)
Demand limit setpoint	AO	Through network (may also be hardwired)
Total number of surge events	AI	Through network
Chilled water supply temperature	AI	Through network
Chilled water return temperature	AI	Through network
Condenser water supply temperature	AI	Through network
Condenser water return temperature	AI	Through network
Condenser temperature	AI	Through network
Evaporator temperature	AI	Through network
Condenser (head) pressure	AI	Through network
Evaporator pressure	AI	Through network
Anti-recycle time remaining	AI	Through network
Variable speed drive speed	AI	Through network
Inlet guide vane signal	AI	Through network
Operating hours	AI	Through network
Oil pressure	AI	Through network

Description	Type	Device
Oil sump temperature	AI	Through network
Power, kW	AI	Through network
Percent of full load current (%FLA)	AI	Through network
Chilled water differential pressure	AI	Through network
Condenser water differential pressure	AI	Through network

4. The system shall allow some read/write point values to be controlled (written to) via the BAS network interface while other points are hard-wired from BAS. Hard-wired point values shall take priority over values written from the network. Similarly, read-only points shall be capable of being read through the network interface and simultaneously sent to hardwired outputs where available. See above for potential list of hard-wired points.
 - I. Surge protection.
 1. Chiller impeller trim and other design elements shall allow for stable, non-surge operation at leaving condenser water temperatures that exceed design values by no more than 2 degrees Fahrenheit. (These conditions can occur due to weather that exceeds statistical design conditions.)
 2. Variable speed drive controls.
 - a. Capacity control shall provide optimal relationship between compressor speed and inlet vane position for maximum energy efficiency (minimizing compressor speed) while minimizing or preventing operation in surge.
 - b. Surge limiting logic shall be designed to work with both fixed and variable evaporator flow chilled water systems.
 - c. Logic shall include sensing surge through current fluctuations. Using condenser and evaporator conditions and predefined chiller maps alone is not acceptable.
 - d. Surge prevention logic shall be independent of hot gas bypass logic, where hot gas bypass is provided.
 - J. Flow verification.
 1. Provide factory installed, wired, and commissioned flow verification device for evaporator flow and/or condenser flow if required for safe operation and freeze protection. If factory installation of flow switch is not an option, the cost to field install the switch shall be included in the price of the chiller. This work is not specified under any other Section.
 2. Flow switch (if required).
 - a. Calorimetric type or other device equally resistant to fouling and corrosion.
 - b. Shall not require more than one pipe diameter (or 12 inches whichever is larger) of straight piping for proper operation.
 - c. Device setpoint shall be configurable to at least manufacturer's listed minimum chiller flow rate.

- d. IFM or equal.
- K. Head pressure control.
 - 1. Required only if chiller cannot handle a cold start with condenser water in tower basins at 55°F or below.
 - 2. Where head pressure control is required.
 - a. Chiller controller shall include an internal control loop to maintain minimum head pressure. The control point of the loop shall be either differential pressure or differential temperature across the condenser and evaporator. The loop shall use proportional + integral logic. Loop proportional and integral gains, head pressure setpoint, and minimum valve position shall be adjusted through the chiller control panel. Minimum valve position shall be set to zero percent open (fully closed).
 - b. Head pressure control loop analog output signal shall be 4-20 mA or 0-10Vdc. (This will be field wired to modulating condenser water valve; valve and wiring are specified under Division 23C.)
 - c. Valve signal shall cause valve to shut when compressor is off even if minimum valve position is non-zero.
- L. Low load stability.
 - 1. Chiller shall be capable of operating at 20% load continuously without cycling and without hot gas bypass.
 - 2. Chiller shall be capable of operating at 15% load continuously without cycling. If hot gas bypass is used to meet this requirement, it shall only be initiated if chilled water supply temperature drops to below setpoint (but above the low limit alarm setpoint) and be disabled when chilled water supply temperature is at setpoint

2.12 Finish

- A. Paint chiller, using manufacturer's standard procedures, except comply with the following minimum requirements:
 - 1. Provide at least one coat of primer with a total dry film thickness of at least 2 mils.
 - 2. Provide at least one coat of epoxy finish with a total dry film thickness of at least 4 mils.
 - 3. Paint surfaces that are to be insulated before applying the insulation.
 - 4. Paint installed insulation to match adjacent uninsulated surfaces.
 - 5. Color of finish coat shall be manufacturer's standard.

2.13 Accessories

- A. Vibration Isolation:
 - 1. Chiller manufacturer shall furnish vibration isolation for each chiller.
 - 2. Neoprene Pad:

- a. Two layers of 0.375-inch-thick, ribbed- or waffle-pattern neoprene pads separated by a 16-gauge, stainless-steel plate.

2.14 Factory Performance Testing

- A. Engage a factory-authorized service representative to train Owner's maintenance
Perform functional performance tests of chillers before shipping.
- B. Factory Performance Testing:
 1. Factory performance test chillers, before shipping, according to AHRI 550/590.
 2. If variable speed drives are included, the factory tests and performance guarantees apply to the drive and chiller as a unit.
 3. All tests shall be conducted with chiller controls in "auto"; manual control of variable speed drives, inlet vanes, etc. will not be accepted. The fact that this requirement was met during tests shall be indicated in writing and initialed by the test technician on the test results form. Test results without this will not be accepted.
 4. Test the following conditions:
 - a. Design conditions indicated.
 - b. At three point(s) of varying part-load performance to be selected by Owner at time of test.

Part 3 – Execution

3.0 1 Responsibility

- A. Chiller installation provided by USM. Includes piping, electrical controls, etc.
- B. Startup, warranty, and training by equipment manufacturer.

3.02 Examination

- A. Examine chillers before installation. Reject chillers that are damaged.
- B. Examine roughing-in for equipment support, anchor-bolt sizes and locations, piping, control and electrical connections to verify actual locations, sizes, and other conditions affecting chiller performance, maintenance, and operations before equipment installation.
 1. Chiller locations indicated on Drawings are approximate. Determine exact locations before roughing-in for piping and control and electrical connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 Chiller Installation

- A. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases.
- B. Equipment Mounting:

1. Install chillers on cast-in-place concrete equipment bases.
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Maintain clearances required by governing code.
- E. Chiller manufacturer's factory-trained service personnel shall charge chiller with refrigerant and fill with oil if not factory installed.
- F. Install separate devices furnished by manufacturer and not factory installed.
 1. Chillers shipped in multiple major assemblies shall be field assembled by chiller manufacturer's factory-trained service personnel.

3.04 Piping Connections

- A. Comply with requirements for piping specified in Section 232113 – Hydronic Piping and Section 232116 – Hydronic Piping Specialties. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Where installing piping adjacent to chillers, allow space for service and maintenance.
- C. Piping Connections:
 1. Connect to inlet with shutoff valve, flexible connector, thermometer, and plugged tee with pressure gauge.
 2. Connect to evaporator outlet with shutoff valve, balancing valve, flexible connector, thermometer, plugged tee with shutoff valve and pressure gauge, and drain connection with valve.
 3. Main piping connections: flanged or grooved elbow as required to allow removal of headers and tubes without major removal of piping.
- D. Refrigeration relief valve discharge piping from rupture valve(s) to atmosphere.
 1. Install spring loaded relief valve provided by chiller manufacturer downstream of rupture disk, if required by chiller manufacturer.
 2. Provide flexible connection at relief valve. Provide dirt leg with drain valve.
 3. Use cap to prevent entry of water.
 4. Include disconnect immediately adjacent to relief valves as a provision for testing.
 5. For chillers installed indoors, extend vent piping to the outdoors without valves or restrictions.
 6. Discharge line for multiple relief valves sized for sum of valve areas.
 7. Comply with ASHRAE 15.
- E. For chillers equipped with a purge system, extend purge vent piping to the outdoors. Comply with ASHRAE 15 and ASHRAE 147.
- F. Connect each chiller drain connection with a drain valve, which is full size of drain connection. Connect drainpipe to drain valve with union, and extend drain pipe to terminate over floor drain.
- G. Connect each chiller water box vent connection with a manual vent, which is full size of vent connection.

3.05 Electrical Power Connections

- A. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection. Nameplate shall be laminated phenolic layers of black with engraved white letters at least 1/2 inch high. Locate nameplate where easily visible.

3.06 Controls Connections

- A. Install control and electrical power wiring to field-mounted control devices.
- B. Connect control wiring between chillers and other equipment to interlock operation as required to provide a complete and functioning system.
- C. Connect control wiring between chiller control interface and control system for remote monitoring and control of chillers. Comply with requirements in Section 230900 "Building Automation System".
- D. Install nameplate on face of chiller control panel indicating the control equipment designation serving chiller and the I/O point designation for each control connection. Nameplate shall be laminated phenolic layers of black with engraved white letters at least 0.5 inches high.

3.07 Startup Service

- A. A factory trained and authorized field service representative shall perform final leak testing, charging, and initial startup and conduct concurrent operator training.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.
 - 2. Verify that refrigerant charge is sufficient and chiller has been leak tested.
 - 3. Verify that pumps are installed and functional.
 - 4. Verify that thermometers and gauges are installed.
 - 5. Operate chiller for run-in period.
 - 6. Check bearing lubrication and oil levels.
 - 7. Verify that refrigerant pressure relief device is vented outside.
 - 8. Verify proper motor rotation.
 - 9. Verify static deflection of vibration isolators, including deflection during chiller startup and shutdown.
 - 10. Verify and record performance of fluid flow and low-temperature interlocks for evaporator and condenser.
 - 11. Verify and record performance of chiller protection devices.
 - 12. Test and adjust controls and safeties. Replace damaged or malfunctioning controls and equipment.
- B. Inspect field-assembled components, equipment installation, piping, controls and electrical connections for proper assembly, installation, and connection.
- C. Visually inspect chiller for damage before starting. Repair or replace damaged components, including insulation. Do not start chiller until damage that is detrimental

to operation has been corrected.

- D. Check for objectionable noise or vibration; correct as needed at no additional cost to the Owner.
- E. Prepare test and inspection startup reports.

3.08 Warranty Period Testing

- A. Within one month(s) of warranty period expiration, perform testing, analysis, and reporting indicated for each chiller.
- B. Oil Analysis:
 - 1. Take oil sample and solicit services of a third-party testing agency, specializing in such analysis, to perform oil analysis.
 - 2. Submit analysis results and recommendations to Owner.
- C. Refrigerant Analysis:
 - 1. Take refrigerant sample and solicit services of a third-party testing agency, specializing in such analysis, to perform refrigerant analysis.
 - 2. Submit analysis results and recommendations to Owner.
- D. Site Access and Scheduling:
 - 1. Contact Owner to schedule testing at least 30 days in advance of testing.
 - 2. Make mutually agreeable schedule adjustments to accommodate Owner's request for testing.
 - 3. Review, with Owner, requirements for visitors in advance of testing.
 - 4. Comply with Owner requirements for visitors while on-site.

3.09 Training

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain chillers.
 - 1. Instructor shall be factory trained and certified.
 - 2. Train personnel in operation and maintenance and to obtain maximum efficiency in plant operation.
 - 3. Provide instructional videos showing general operation and maintenance that are coordinated with operation and maintenance manuals.
 - 4. Obtain Owner sign-off that training is complete.
 - 5. Owner training shall be held at Project site.

WATER COOLED CHILLER

TAG	MANUFACTURER AND MODEL NO.	COMP TYPE	STANDARD (TONS)	REFR TYPE	EVAPORATOR										CONDENSER										ELECTRICAL						OPER (LBS)	REMARKS
					DESIGN GPM	MIN GPM	MAX GPM	FLUID	EWI	LWT	PO(FT)	F.F.	PASSES	DESIGN GPM	MIN GPM	MAX GPM	FLUID	EWI	LWT	PO(FT)	F.F.	PASSES	SERVICE	RLA	KW	MCA	MOCP	NPLV				
1	TRANE CVHF	CENTRI-FUGAL	700	R-514A	1750	398	2536	WATER	52	42	27	0.0001	2	2100	785	2898	WATER	85	95	21	0.00025	2	4600/30	572	400	668	1000	0.3705	28980	BACHU COMM CARD, UNIT MOUNTED, REF. COOLED AND W/CHROUT BREAKER - 69K SCOR, HINGED WATER BOXES, EVAP AND COND. END OPPOSITE CONNECTIONS, 3/4" FACTORY INSULATION ON ALL COOL CHILLER SURFACES, 5 YR WHOLE UNIT PARTS, LABOR, REFRIGERANT, W/INSANTLY.		

APPROXIMATE CHILLER DIMENSIONS. FIELD VERIFY PROPOSED CHILLER WILL FIT IN ALLOCATED SPACE.

END OF SECTION

Point of Contact

For questions, contact the Buyer listed on the Bid Coversheet at:

bids@usm.edu

Submission Instructions to Bidders

One (1) signed original, two (2) copies, and one (1) portable virus/malware free electronic version (USB jump drive) of the sealed bid response (if electronic copy is not included, USM reserves the right to request an electronic copy of the exact bid response prior to review of the bid), subject to the conditions made a part hereof, will be received by **2:00 PM CDT on Wednesday, December 18, 2024** in the USM Procurement and Contract Services office, as indicated in the General Terms, Conditions, and Instructions to Bidders described herein. It is the responsibility of the respondent to ensure that the proposal package arrives in the Procurement and Contract Services Office.

Each bid **must** be submitted in a sealed envelope bearing on the outside the name "Bid # 25-24 Polymer Science Chiller Replacement," the name of the Vendor, and the opening date specified on the coversheet.

For regular mail:

The University of Southern Mississippi
Attn: Deidre Edwards, Buyer
118 College Drive, Box 5003
Hattiesburg, MS 39406
BID 25-24

For FedEx, UPS, or other express couriers:

The University of Southern Mississippi
Attn: Deidre Edwards, Buyer
2609 W. 4th Street
Hattiesburg, MS 39401
BID 25-24

Hand-carried responses should be brought to:

The University of Southern Mississippi
Attn: Deidre Edwards, Buyer
214 Bond Hall

Hattiesburg, MS 39406
BID 25-24

As an alternative to traditional sealed proposals in envelopes, the University of Southern Mississippi is capable of receiving electronic bid responses. While this option is available, it is not required and we ask that all potential respondents keep in mind that with any electronic system there could be delays or glitches with the submission process; therefore the University *highly encourages traditional sealed responses* which are either mailed or submitted in person. Additionally, the University will not be responsible for issues with attempted submissions of bids using the electronic method.

Should a vendor choose to submit their response electronically, please follow the instructions below using the following website:

https://www.ms.gov/dfa/contract_bid_search/Home/Sell.

On this site you will find helpful links to procurement opportunities, as well as a link to supplier registration. If not already registered in this system, potential bidders will first need to click on 'Supplier Registration' and follow the steps outlined (a one-time process). Once registered, suppliers can return to the original website and click on 'Procurement Opportunities' where they can either search by keyword for the bid they desire to respond to or leave the search box blank and click 'Search' for a listing of all current bids and proposals for the various State of Mississippi offices.

Please note that emailed bids will not be accepted.

Any bid may be withdrawn prior to scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered.

The University of Southern Mississippi reserves the right to accept or reject any or all proposals and to waive any formalities.

Vendors are responsible for examining all specifications, terms, conditions, and instructions of this request. Failure to do so will be at Vendor's risk.

In order to ensure all interested bidders receive any addenda that may be issued, proposers must email their intent to propose using the Intent to Bid link on the USM Bid Listing under RFP 23-20 prior to the deadline to submit:

<https://www.usm.edu/procurement-contract-services/current-bids-and-sole-source-notices.php>

USM General Terms, Conditions, and Instructions for Bids/Proposals

- 1.) Failure to examine any drawings, specifications, and instructions will be at bidder's risk.
- 2.) Samples of items when called for must be furnished free of expense and if not destroyed in testing, will, upon request, be returned at the bidder's expense. Request for the return of samples must be made within ten (10) days following opening bids. Each individual sample must be labeled with bidder's name and manufacturer's brand name and number.
- 3.) As a public entity of the state, we use sealed bidding to ensure "fair and open competition" to ensure no one in the buying organization can influence the bidding process or steer the selection of a particular company by sharing competitive bid information during the solicitation process. Generally, all bids must remain sealed until they are opened publicly at the time stated in the notice—advance disclosure of the terms of a bid may be cause for rejection of said bid. Bidders should never send advanced copies of a sealed bid via email or screenshots of electronic bids. Bidders must submit sealed bids to be opened at the time and place stated in the solicitation for the public opening of bids and must not be revealed to the buyer before that time. Bids must be signed and sealed with bidder's name and address on the outside of the envelope, and the date and time of the bid opening and the bid file number shown in the lower-left corner of the packages, envelopes, express mailing labels, boxes, etc.
- 4.) In order for your bid to be considered, it must be received and time stamped in our office by 2:00 P.M. of the bid opening date. It is the responsibility of the vendor to ensure their bid is received within the appointed time. If your bid package is not received in Bond Hall, Room 214, by 2:00 P.M. of the bid opening date, it will not be considered.

If you are delivering your bid, you need to hand carry the bid package to:

The University of Southern Mississippi
Procurement Dept. (Bid)
Bond Hall, Room 214
Hattiesburg, Mississippi
BID # 25-24

If you are mailing your bid package via U.S. Postal Service, mail to:

The University of Southern Mississippi
Procurement Dept. (Bid)
118 College Drive #5003
Hattiesburg, MS 39406-0001
BID # 25-24

If you are express mailing your bid package via Federal Express or UPS, or any other

delivery service which requires the use of a physical address, deliver to:

The University of Southern Mississippi
Procurement Dept. (Bid)
2609 West 4th Street
Hattiesburg, MS 39401
BID # 25-24

- 5.) Bids or proposals shall not be modified, corrected, altered, or amended after the specified closing time and the opening of such bids, unless otherwise noted in the request for bids or proposals.
- 6.) The University of Southern Mississippi reserves the right to reject any and all bids, to waive any informality in bids, and unless otherwise specified by the bidders, to accept any items on the bid. If the bidder fails to state the time within which bids must be accepted, it is understood and agreed that The University of Southern Mississippi shall have 60 days to accept. The University of Southern Mississippi reserves the right to make an award to this bid on an all or none basis, or on a line by line basis, whichever serves the best interest of The University of Southern Mississippi.
- 7.) Contracts and purchases will be made or entered into with the lowest, responsible bidder meeting specifications.
- 8.) A written purchase order or contract award mailed or otherwise furnished to the successful bidder within the time of acceptance specified in the Invitation for Bid results in a binding contract without further action by either party. The contract shall not be assignable by the vendor in whole or in part without the written consent of The University of Southern Mississippi.
- 9.) Bid files may be examined during normal working hours by bid participants. Non-participants will be prohibited from obtaining any information relative to the bid until the official award has been made.
- 10.) If purchase orders or contracts are canceled because of the awarded vendor's failure to perform or request for price increase, that vendor shall be removed from our bidders' list for a period of 24 months.
- 11.) No addendum will be issued within a period of two (2) working days prior to the time and date set for the bid opening. Should it become necessary to issue an addendum within the two-day period prior to the bid opening, the bid date will be reset giving bidders ample time to answer the addendum.
- 12.) Alternate bids, unless specifically requested or allowed, will not be considered.

- 13.) Bid openings will be conducted open to the public. However, they will serve only to open the bids. No discussion will be entered into with any vendor as to the quality or provisions of the specifications, and no award will be made either stated or implied at the bid opening. After the close of the bid opening meeting, the bids will be considered to be in the evaluation process and will not be available for review by bidders. Proposal openings are not required to be open to the public; however, the resulting award is open for public inspection.
- 14.) Prices quoted shall be firm for the term of the contract or for the stated time of acceptance.
- 15.) The bidder understands that The University of Southern Mississippi is an equal opportunity employer and, therefore, maintains a policy which prohibits unlawful discrimination based on race, color, creed, sex, age, national origin, physical handicap, disability, or any other such discrimination; and the bidder, by signing this bid, agrees during the term of agreement that the bidder will strictly adhere to this policy in its employment practices and provision of products or services.
- 16.) Bidders must upon request of The University of Southern Mississippi furnish satisfactory evidence of their ability to furnish products or services in accordance with the terms and conditions of these specifications. The University of Southern Mississippi reserves the right to make the final determination as to the bidder's ability.
- 17.) Questions or problems arising from bid procedures should be directed to the Buyer listed on the solicitation at:

The University of Southern Mississippi
118 College Drive #5003
Hattiesburg, MS 39406-0001
Phone: (601) 266-4131

- 18.) All items must equal or exceed the specifications listed. The absence of detail specifications or the omission of detail description shall be recognized as meaning that only the best commercial practices are to prevail and that only first quality materials and workmanship are to be used.
- 19.) It is the intent of the specifications to obtain a product that will adequately meet the needs of the user while promoting the greatest extent of competition that is practicable. It is the responsibility of the prospective bidder to review the entire Invitation to Bid packet and to notify The University of Southern Mississippi if the Specifications, Instructions, General, or Special Conditions are formulated in a manner which would unnecessarily restrict competition.
- 20.) It shall be incumbent upon the bidders to understand the specifications. Any requests

for clarifications shall be in writing and shall be submitted to our Procurement Services office at least five (5) days prior to the time and date set for the bid opening, unless otherwise noted in the bid or proposal specifications.

- 21.) The minimum specifications are used to set a standard and in no case are used with the intention to discriminate against any manufacturer. Bidders should note the name and the manufacturer and model number of the product they propose to furnish and submit descriptive literature.
- 22.) Trade names, brand names, and/or manufacturer's information used in these specifications are for the purpose of establishing quality, unless otherwise noted. Bids on products of other qualified manufacturers are acceptable, provided they are demonstrated as equal to those specified in construction, design and suitability. Each bidder shall submit with his bid a complete brochure with pictures on each item and shall point out specifically any deviations from the specified items. Failure to do so may disqualify any bid. Please bid as specified or an approved equal.
- 23.) A copy of the manufacturer's standard guarantee/warranty shall accompany and become a part of this bid.
- 24.) There are no federal or state laws that prohibit bidders from submitting a bid lower than a price or bid given to the U.S. Government. Bidders may bid lower than U.S. Government contract price without any liability as The University of Southern Mississippi is exempt from the provisions of the Robinson-Patman Act and other related laws. In addition, the U.S. Government has no provisions in any of its purchasing arrangements with bidders whereby a lower price to The University of Southern Mississippi must automatically be given to the U.S. Government.
- 25.) All invoices, unless noted otherwise, are to be billed to:

The University of Southern Mississippi
Accounts Payable
118 College Drive #5104
Hattiesburg, MS 39406-0001
- 26.) All equipment bid shall be of current production and of the latest design and construction.
- 27.) Where all, or part(s), of the bid is requested on a unit price basis, both the unit prices and the extension of the unit prices constitute a basis of determining the lowest responsible and responsive bidder. In cases of error in the extension of price, the unit price will govern.
- 28.) All bidders/respondents are on notice that USM is a public agency of the State of

Mississippi and is subject to the Mississippi Public Records Act, Miss. Code Ann. § 25-6-1, *et seq.* If a public records request is made for any information provided to the USM pursuant to this solicitation, USM shall promptly notify the Disclosing Party of such request. The Disclosing Party shall promptly institute appropriate legal proceedings to protect its information. No party to this agreement shall be liable to the other party for disclosures of information required by court order or required by law. For clarity, documents are not considered public record unless and until an award is made from such solicitation.

- 29.) Should the University of Southern Mississippi close due to inclement weather conditions, or any other unforeseen events on the bid opening date, sealed bids will open the following business day at the same time and location.
- 30.) As an alternative to traditional sealed bids in envelopes, the University of Southern Mississippi is capable of receiving electronic bid responses. While this option is available, it is not required and we ask that all potential respondents keep in mind that with any electronic system there could be delays or glitches with the submission process; therefore the University highly encourages traditional sealed bids which are either mailed or submitted in person. Should a vendor choose to submit their response electronically, please follow the instructions below using the following website: https://www.ms.gov/dfa/contract_bid_search/Home/Sell. On this site you will find helpful links to procurement opportunities, as well as a link to supplier registration. If not already registered in this system, potential bidders will first need to click on 'Supplier Registration' and follow the steps outlined (a one-time process). Once registered, they can return to the original website and click on 'Procurement Opportunities' where they can either search by keyword for the bid they desire to respond to or leave the search box blank and click 'Search' for a listing of all current bids and proposals for the various State of Mississippi offices. Instructions on how to respond to an RFX in M.A.G.I.C. may be located at the following link:

<http://uperform.magic.ms.gov/gm/folder-1.11.9125?mode=EU&primaryCSH=RFX%2Cresponses>

NOTE: If you experience any problems with submitting your response through M.A.G.I.C. Please email the M.A.G.I.C. IT Helpdesk at mash@dfa.ms.gov.

****PLEASE NOTE: EMAILED BIDS WILL NOT BE ACCEPTED, AND IT MAY CAUSE YOUR BID TO BE REJECTED FOR EARLY DISCLOSURE. ****

With regard to construction bids, there is one additional step required during the bid submission process. Along with the bid response and other attachments, contractors will also need to attach their Certificate of Responsibility (COR), or a statement that the bid enclosed does not exceed Fifty Thousand Dollars (\$ 50,000.00). If their COR or such statement is not attached, the bid will be invalid and not considered. **AA/EOE/ADA**