Purchase



Marshall University Office of Purchasing

Order#

Change Request				EST.			rshall Drive V 25755-4100	MU21F	HVACCHILL
FY 22	Buyer AWN		Date 7/15/2021	Accou	ınt). Date /2020	Contract MU21HVA	CCHILL
Document ☐ Requisition (Cancellation only) ☐ Regular Purchase Order ☐ Contract Purchase Order ☐ Open End Contract Purchase ☐ Agreement				Document Action ☐ Cancellation ☐ Increase/Decreas ☐ Unused Balance ☐ Freight ☐ Renewal ☐ Extension Error	se	☐ Error in Total Amount ☐ Change of Account ☐ Change of Vendor Name/Address ☐ Other			
Vendor Name, Address, Phone #, etc. Vendor Code Nitro Construction Services, Inc. 4300 1st Avenue Nitro, WV 25143 Ph# (304) 204-1500 Fax FEIN# 20-8844160					ī# 20-8844160		BOG Unit Name & Address Marshall University Office of Purchasing One John Marshall Drive Huntington, WV 25755-4100		
Item#	Quantity			Desc	cription of Change			Unit Price	Extended Price
Change Order # 1 To renew contract MU21HVACCHILL all in accordance terms, conditions, and specifications contained is contract and all authorized change orders. MU School of Medicine Chiller and HVAC Maintenance Services				in the original					
		Renewa	e: Septemb al: No. 1 of 4 als Remainii	ļ.)21 - August 31, 2 ee (3)	022			(m)
Reason for	Change: R	enewal					Previous To Increase Decrease New Total	\$	OPEN-END
				0.0			1 0.0.		2/22/21

Authorized Signature N/A Attorney General if required Date

Approved:

MU21HVACCHILL – Marshall University Joan C. Edwards School of Medicine Chiller and HVAC Full Service/Comprehensive Maintenance Contract **Pricing Page**

ITEM NO.	DESCRIPTION	ANNUAL FEE	QUARTERLY FEE	SEMI-ANNUAL FEE	MONTHLY FEE	TOTAL ANNUAL COST
1	Chiller Full Service/Comprehensive					
	Maintenance Contract	\$ 24,795.00	\$ 4,100.00	\$ 2,146.00	\$ 10,407.00	\$ 41,628.00

ITEM NO.	DESCRIPTION	ANNUAL FEE	QUARTERLY FEE	SEMI-ANNUAL FEE	TOTAL ANNUAL COST
2	HVAC Full Service/Comprehensive				
	Maintenance Contract	\$ 33,850.00	\$ 14,084.00	\$ 8,510.00	\$ 56,444.00

ITEM NO.	DESCRIPTION	UOM	QTY	UNIT PRICE
3	MUMC quarterly invoice for PM of HVAC	QTR	4	\$ 6,250.00
4	BCC quarterly invoice for PM and HVAC	QTR	4	\$ 3,750.00
5	MEB quarterly invoice for PM of HVAC	QTR	4	\$ 5,750.00
6	Chapmanville-Coalfield Health Center quarterly for PM of HVAC	QTR	4	\$ 1,500.00
7	Douglass Center	QTR	4	\$ 2,750.00
8	School of Pharmacy	QTR	4	\$ 4,518.00

^{*} Above pricing is breakdown of each unit/location per quarter.

SPECIFICATIONS

1. PURPOSE AND SCOPE: The Marshall University Office of Purchasing is soliciting bids on behalf of the Marshall University Joan C. Edwards School of Medicine (SOM) to establish a chiller and HVAC full service comprehensive contract. Vendor must furnish all supervision, labor, materials, equipment, tools, chemicals, refrigerants, transportation, and all effort necessary to perform the requirements herein.

Please see Exhibit A - Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist and Exhibit B - HVAC Inspection/Service Requirements for Annual, Semi-Annual and Quarterly Checklist for the scope of work to be completed under this contract.

SOM has six (6) locations that will be served by this contract. The locations are as follows:

- Marshall University Medical Center (MUMC), Huntington, WV
- Marshall University Erma Byrd Outreach Center, Huntington, WV
- Marshall University Coon Education Building, Huntington, WV
- Marshall University School of Pharmacy (Stephen J. Kopp Hall), Huntington, WV
- Marshall University Douglass Center, Huntington, WV
- Marshall Coal Field Heath Center, Chapmanville, WV

A master list of all equipment covered under this Contract is included in Exhibit C – SOM Equipment Inventory.

- **2. DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.
 - **2.1** "Chiller and HVAC Maintenance" means preventive maintenance and corrective Maintenance services provided by Vendor under this Contract and shall not include the addition of new equipment to increase the size or coverage area of the existing chiller and HVAC system.
 - **2.2 "Preventive Maintenance"** means activities that have been specifically identified on Exhibits A and B. Preventive maintenance is intended to include regularly scheduled activities that are known and anticipated in advance rather than one-time repairs.
 - **2.3** "Corrective Maintenance" includes all work not identified as preventive maintenance on Exhibits A and B. corrective maintenance is intended to cover work performed on an as-needed basis to identify and correct a malfunction or failure in a

- chiller or HVAC system, and testing to ensure that equipment is in proper working order after the repair.
- **2.4** "Pricing Pages" means the schedule of prices, estimated quantity, and totals attached hereto as Exhibit D.
- **2.5** "RFQ" means the official RFQ published by the Office of Purchasing and identified as MU21HVACCHILL.
- **2.6** "OEM" means Original Equipment Manufacturer. An original equipment manufacturer (OEM) makes equipment or components that are then marketed by its client, another manufacturer, or a reseller, usually under that reseller's own name.
- **3. PERFORMANCE REQUIREMENTS:** Vendor shall provide Department with chiller and HVAC maintenance on a continuing basis as outlined in this Contract.
 - 3.1 Chiller and HVAC Maintenance (Preventive and Corrective)
 - **3.1.1** Vendor shall provide chiller and HVAC maintenance in accordance with manufacturer's recommendations and specifications, as well as industry best practices, at all facilities listed on Exhibit C attached hereto and incorporated herein by reference.
 - **3.1.2** Vendor shall furnish and install parts as necessary to keep the chiller and HVAC systems at each facility listed on Exhibit C in proper working order.
 - **3.1.3** Vendor shall furnish all equipment, tools, and parts necessary for the performance of the chiller and HVAC maintenance. Equipment and tools will be provided at no cost to the Department.
 - **3.1.4** Vendor shall provide expendable materials used in the scope of performing under this Contract at no cost to the Department. Such items may include, but are not limited to, grease, cleaning supplies, rags, etc.
 - 3.1.5 Vendor shall be responsible for replacement of ceiling grid and tiles should they become soiled or damaged by Vendor at no cost to the Department. Department will make final determination whether to clean or replace tiles on a case-by-case basis.
 - **3.1.6** Vendor may only remove equipment from service for a period of twenty-four (24) hours or more with written permission from the Department. Any

- request to remove equipment for twenty-four (24) hours or more must include a description of the work required and an estimate of the time the equipment will be out of service.
- **3.1.7** Vendor shall maintain a continuous twenty-four (24) hour emergency telephone service where they can be reached every day of the week, including Sundays and Holidays.
- **3.1.8** Vendor shall not perform any chiller and HVAC maintenance under this contract without prior approval from the Department.

3.2 Preventive Maintenance:

- **3.2.1** Vendor shall perform preventive maintenance on the schedule outlined in Exhibits A and B in accordance with a schedule mutually agreed upon by the Vendor and the Department.
- 3.2.2 Vendor will be compensated for preventive maintenance activities through an annual, quarterly, semi-annual, or monthly fee. Vendor must provide parts necessary to perform preventive maintenance at no additional cost to Department. Any cost for such parts must be included in the preventive maintenance fee.
- **3.2.3** Vendor shall submit a proposed schedule of all preventive maintenance within five (5) days of Vendor being awarded this contract for approval by Department, at Department's discretion.

3.3 Corrective Maintenance:

- **3.3.1** Vendor shall perform corrective maintenance as needed to restore the chiller and HVAC systems to working order.
- **3.3.2** Vendor shall respond to corrective maintenance calls from Department by phone or in person within two (2) hours and must arrive on site to begin performance as soon as possible, but no later than four (4) hours after Vendor is notified of the request. Vendor may only deviate from the required four (4) hour response time with written permission from the Department.

- **3.3.3** Corrective maintenance must be performed between the hours of 8:00 A.M. and 4:30 P.M., Monday through Friday, excluding Holidays, unless the Department approves work at another time.
 - **3.3.3.1** Department may request Corrective Maintenance on an emergency basis by notifying the Vendor of the emergency.
 - **3.3.3.1.1** Vendor must respond to emergency calls with-in two (2) hours.
 - **3.3.3.1.2** Vendor's emergency response for service must be answered within a thirty (30) minute timeframe of the initial call.
 - **3.3.3.1.3** Service response time must be within the two (2) hours of the initial answered call-back.
 - 3.3.3.1.4 Maximum response time for an emergency/ unscheduled service call will be four (4) hours: Non-emergency call response time shall be less than twenty-four (24) hours.

3.3.4 Parts:

- **3.3.4.1** All replacement parts/materials shall be original equipment manufacturer (OEM). These parts shall be new and completely designed and manufactured to the quality standards and tolerances recommended by the original equipment manufacturer. Any parts not OEM, must be approved by SOM/Marshall University before installation. If parts are not included in contract cost, Vendors written quote must be obtained prior to any order and be submitted to SOM for approval prior to any repairs taking place.
- **3.3.4.2** Vendor shall maintain a supply or inventory of routinely used replacement parts for the chiller and HVAC equipment utilized by the Department. All replacement parts shall be equal to or better than original manufacturer's parts. All parts used for replacement for normal wear or failed parts shall be new and obtained from authorized parts suppliers of the appropriate equipment manufacturer.
- **3.3.4.3** SOM will provide filters for all A/C units over 7.5 tons. Vendor will

assist with replacement as time permits. Filter replacement will <u>not</u> be considered a primary responsibility of the Vendor.

3.3.5 Repair Versus Replacement of Equipment

- **3.3.5.1** SOM Contract/Maintenance Manager must review and approve all repairs/ replacement: i.e. chiller compressor, pump impeller or motor replacement, etc., prior to any work or procurement of parts beginning order. If SOM elects to replace a piece of equipment contained in the schedules, the Vendor shall provide a cost offset to the Department. The offset will reflect the Vendor costs associated with repair parts and labor that would have been included under the contract terms and conditions.
- **3.3.5.2** Any equipment replacement that is considered beyond economical repair, the Vendor will submit a written quote for its replacement and installation. **SOM reserves the right to seek competitive bids in this situation.**
- **3.3.5.3** In the event, any equipment, as listed in specifications or Appendix B, becomes un-repairable or Vendor receives a notice from manufacturer that the equipment will no longer be available i.e.: (curtailment, obsolescence, no longer manufacturer or supported). The Vendor shall notify the owner SOM. Vendor shall prepare as early as possible a Proposal Request with options to include the following requirements:
 - **3.3.5.3.1** Impact to facility.
 - **3.3.5.3.2** Expected timeline to order and install replacement.
 - **3.3.5.3.3** Material Cost to replace equipment or component.
 - **3.3.5.3.4** Labor cost to install
 - **3.3.5.3.5** Possible permits required to perform work
 - **3.3.5.3.6** Any inspections required
 - **3.3.5.3.7** Overall Schedule
- **3.3.5.4** In the event equipment fails from a catastrophic failure, the Vendor will replace it, including all labor and material with no additional cost to owner SOM. An approved schedule for replacement is a requirement between the Vendor and owner SOM.
- **3.3.5.5** Any equipment replacement that is considered beyond economical repair, the Vendor will submit a written quote for its

replacement and installation. **SOM reserves the right to seek competitive bids in this situation.**

- **3.3.5.6** All work will be scheduled with Facility Contact. The Vendor will report in when arriving and check-out when leaving, ensuring that appropriate reporting or documentation of work accomplished is dropped off before departing job site.
- **3.3.5.7** Vendor shall be responsible for the proper disposal or reclamation of all oils and refrigerants, per (**EPH**) Environmental Public Health (General Waste Collection) and Environmental Protection Agency (**EPA**) Regulations.

3.3.6 WARRANTY

3.3.6.1 The minimum warranty period shall be twelve months (12) months for parts; twelve months (12) months for labor. Warranty repair and/or replacement shall be performed at no additional charge to SOM. All warranty periods shall begin upon acceptance by the Department.

3.3.7 TRAINING

- **3.3.7.1** Upon request, the Vendor shall provide free of charge, formal and/or information training to SOM Maintenance employee's so that our technician staff personnel understand the operation and diagnostic procedures necessary to keep the equipment operating in the most efficient manner.
- **3.3.7.2** Department will designate a representative in their employment to receive any instructions/ recommendations from the Vendor in the operation of equipment.
- **3.3.7.3** Vendor will explain the preventive and corrective maintenance programs to Department staff thoroughly including schedules, procedures, responsibilities, troubleshooting and test requirements
- **4. FACILITIES ACCESS:** The facilities identified in this contract may require access cards and/or keys to gain entrance.
 - **4.1** Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

- **4.2** Vendor will be responsible for controlling cards and keys and will pay replacement fee if the cards or keys become lost or stolen.
- **4.3** Vendor shall notify Department immediately of any lost, stolen, or missing card or key.
- **4.4** Anyone performing under this Contract will be subject to Department's security protocol and procedures.
- **4.5** Vendor shall inform all staff of Department's security protocol and procedures.

5. QUALIFICATIONS:

- **5.1 Experience:** Vendor, or Vendor's employees that will be performing under this contract, must have successfully maintained CHILLER equipment of the type, character and magnitude currently being utilized by Department and included on the list of CHILLER equipment, attached hereto as Exhibit C, on two or more occasions in the last five years. Vendor should provide information confirming its experience prior to contract award.
- **5.2 Training:** Vendor, or Vendor's employees that will be performing under this contract, shall be trained, and/or certified to provide chiller and HVAC maintenance on the equipment located at the Department's facilities as shown on Exhibit C. Vendor must provide Department with documentation satisfactory to verify training and certification upon request.
- **5.3 Factory Authorization:** Vendor must be authorized by the applicable manufacturer to perform repair and warranty work on the equipment listed on Exhibit C.
- **5.4 Certifications:** Vendor shall ensure that all Maintenance performed under this Contract is performed by an appropriately licensed individual. Required licenses may include, but are not limited to the following:
 - **5.4.1** Electricians WV Electricians License
 - **5.4.2** Plumbers WV Plumbers License
 - **5.4.3** Chiller and HVAC EPA 608 Certification and Apprentice Certification or Completion of chiller and HVAC Vocational Program.
 - **5.4.4** WV Contractor's License

- **5.5 Building Codes:** At a minimum, the chiller and HVAC maintenance shall comply with the current editions of the following standards and codes in effect at the time of performance.
 - **5.5.1** National Electric Code (NEC)
 - **5.5.2** International Building Code (IBC)
 - **5.5.3** International Mechanical Code (IMC)
 - **5.5.4** Underwriters Laboratories: Products shall be UL-916-PAZX listed.
 - **5.5.5** ANSI/ASHRAE Standard 135-2004 (BACnet)
 - **5.5.6** ANSI/EIA/CEA-709.1 (LonTalk)
 - **5.5.7** NFPA (National Fire Protection Association)
- **6. REPORTS:** Vendor shall provide all the reports as outlined below.
 - **6.1 Preventive Maintenance Log:** Vendor shall provide and update a Preventive Maintenance log in the form of a chart posted in the vicinity of chiller and HVAC equipment. The Preventive Maintenance log must include a listing of all Preventive Maintenance performed, the name of the individual performing the Preventive Maintenance, the date it was performed, and the time spent performing the Preventive Maintenance. Vendor shall also maintain a duplicate maintenance log that Vendor must submit to Department monthly.
 - **6.2 Wiring Diagram:** Vendor shall maintain updated wiring diagrams for the chiller and HVAC equipment. Vendor must permanently mount wiring diagrams on full-size display panels near the equipment controllers. These wiring diagrams are to remain the property of the Department and will be surrendered upon termination of this contract.
 - **6.3 Corrective Maintenance Log:** Vendor shall maintain a log of all Corrective Maintenance performed under this Contract. The log must include the name of the individual performing the corrective maintenance, a description of the work performed, a list of any parts that were repaired or replaced, the total time spent performing the Corrective Maintenance, and the date and time Corrective Maintenance was performed. Vendor shall submit a copy of this log to Department upon Department's request.
 - **6.4 Quarterly and Annual Reports:** Vendor shall provide quarterly reports and annual summaries to the Department, and to the Office of Purchasing when requested, with a detailed listing of Chiller and HVAC Maintenance performed under this Contract

during that period. The quarterly and annual reports must include a listing of the hours worked per project, the cost of hours worked per project, the total of all hours worked and corresponding cost, a listing of parts utilized per project, the cost of parts utilized per project, the total parts used for the period, the cost of parts for the period, a grand total of all costs for the period, and any other information that the Department or Office of Purchasing may request.

- **7. TRAVEL:** Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Such costs will not be paid by the Department.
- **8. CONTRACT AWARD:** This Contract will be awarded to the Vendor meeting the required specifications that provides the lowest Total Cost on the Pricing Pages.
 - **8.1 Pricing Pages:** Vendor should complete the Pricing Pages by inserting the requested information in the appropriate location and performing the calculations necessary to arrive at a total cost. The requested information includes the following: Chillers-Annual, Quarterly, Semi-Annual and Monthly Fee costs; and HVAC-Annual, Quarterly and Semi-Annual costs.

Vendor should type or electronically enter the information into the Pricing Pages to prevent errors in the evaluation. Notwithstanding the foregoing, the Office of Purchasing may correct errors at its discretion.

9. SCHEDULING:

9.1 Preventive and Corrective Maintenance Scheduling: After award of this Contract the Department and Vendor shall agree upon a Preventive Maintenance schedule.

10. BILLING / PAYMENT:

10.1 Preventive and Corrective Maintenance: All labor and parts associated with the preventative and corrective maintenance activities must be included in each billing cycle.

11. DEFAULT:

- **11.1** The following shall be considered a default under this Contract.
 - **11.1.1** Failure to perform chiller and HVAC maintenance in accordance with the requirements contained in herein.
 - **11.1.2** Failure to comply with other specifications and requirements contained herein.
 - **11.1.3** Failure to comply with any applicable law, rule, ordinance, or building code applicable to this Contract or chiller and HVAC maintenance generally.
 - **11.1.4** Failure to remedy deficient performance upon request.
- **11.2** The following remedies shall be available upon default.
 - **11.2.1** Cancellation of the Contract.
 - **11.2.2** Cancellation of one or more release orders issued under this Contract.
 - 11.2.3 Any other remedies available in law or equity.
- 11.3 Department reserves the right to inspect the chiller and HVAC maintenance to ensure that Vendor's performance is in compliance with this Contract. If Department determines that Vendor has failed to perform in accordance with this Contract, Department may demand that the Vendor immediately remedy the failure or consider the failure to be a default. Vendor's failure to remedy the deficient performance, if given the opportunity to do so, shall be considered a default.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

Please Note: A copy of annual inspection reports (Vendor's form) must be forwarded to SOM's Facilities Management Department for formal review.

At a minimum, the successful vendor should complete the following tasks as part of their Annual, Semi-Annual, Quarterly and Monthly inspections.

For all inspections, the Vendor must complete the following:

- 1. Report to the Department prior to inspection;
- 2. Record and report abnormal conditions, measurements taken, etc.;
- 3. Review Department logs with the Department for operational problems with trends;
- 4. Provide a written report of completed work, operating log and indicate any uncorrected deficiencies detected; and
- 5. Record findings on inspection log.

ANNUAL CHILLER INSPECTION/SERVICE:

Refrigerant Circuit

- Check and record refrigerant level
- Inspect and complete leak check
- Calculate refrigerant loss and report to the customer.
- Repair minor leaks as required (e.g. valve packing, flare nuts).
- Check vanes for free and smooth operation.
- Check mechanical linkages for wear.
- Adjust refrigerant level
- Vibration Analysis shall be conducted on a yearly basis and a baseline trend established, charted, and compared with the manufacturer's specifications. This trend chart shall be provided to **SOM** Operations & Maintenance Division Chief as part of the yearly preventive maintenance package.

Purge System

- Check purge unit controls for proper operation.
- Check and clean purge drum as required
- Clean the condenser coil
- Clean strainers or replace filters as required.
- Check the purge compressor assembly for leaks, as required.
- Check the purge unit for proper operation.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

- Inspect and report on operating conditions.
- Internal purge condenser inspection and cleaning (includes new gaskets), when applicable
- Inspect purge float, adjust if needed.
- Clean purge sight glass (includes new gaskets), if removable.
- Inspect, adjust solenoid valve, air relief oil separator.
- Perform leak test on purge system.

Condenser

- Visually inspect condenser tubes for cleanliness.
- Brush 100% of the condenser tubes no less than once every year.
- Remove both condenser heads and brush clean the tubes.
- Perform non-destructive eddy current testing on 100% of condenser tubes first year.
- Eddy Current Test 100% of the condenser tubes no less than once every two (2) years.

Air Cooled Chillers

- Clean / wash any air-cooled coils including chemical solution, as required
- Inspect condenser fans operation Variable frequency drive unit, if applicable.
- Check fans for free rotation and correct direction, clean, repair or replace, as needed.
- Check fan motors clean, repair or replace, as needed.

Evaporator Tubes

- Brush 100% of the evaporator tubes no less than one time every five (5) years
- Perform non-destructive Eddy Current Test 100% of the evaporator tubes no less than one time every five (5) years.
- Vendor must brush evaporator tubes before each Eddy Current Test is performed.

Controls and Safety

- Verify all settings in the electronic control panel.
- Inspect the control panel for cleanliness.
- Inspect wiring and connections for tightness and signs for overheating and discoloration.
- Verify the operation of the vane control system
- Verify the working condition of all indicator/alarm lights and LED/LCD displays.
- Verify the operation of the oil sump temperature control devise.
- Test high condenser pressure safety device. Calibrate and record setting.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

- Test low evaporator temperature safety device. Calibrate and record setting.
- Test low oil pressure safety device. Calibrate and record setting.
- Test high motor temperature safety device. Calibrate and record.
- Test operation of chilled water pump and condenser water pump starter auxiliary contacts.

Lubrication System

- Oil Analysis: This will include a full spectrum analysis to be collected under EPA guidelines. The analysis will test for wear and corrosion elements in the oil sample.
- Test Oil to determine the water content of the oil.
- Pull oil sample for spectroscopic analysis.
- Check oil for acid content and discoloration. Make recommendations to the customer based on the results of the test.
- Measure and record the oil pump voltage and amperage.
- Verify the operation of the oil heater. Measure amps and compare readings with the watt rating of the heater.
- Change the oil filter.
- Verify the oil level.
- Tighten terminal on oil pump motors and heaters.
- Replace factory mounted refrigerant filter.
- Inspect and report on conditions of oil pump, oil cooler, and oil heater.

Motor and Starter

- Clean the starter and cabinet.
- Inspect wiring and connections for tightness and signs of overheating and discoloration.
- Check condition of the contacts for wear pitting.
- Check contactors for free and smooth operation.
- Check the mechanical linkages for wear, security, and clearances.
- Check tightness of the motor terminal connections.
- Meg the motor and record rating.
- Verify the operation of the electrical interlocks.
- Confirm proper compressor/motor transition time.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

Provide Infrared Inspections

- Perform the thermal electrical/mechanical inspection of chillers electrical and mechanical equipment at SOM facility's Chillers, these will be on Compressors, System pumps, Cooling tower fans and Auxiliaries. Provides a complete list of all equipment inspected with summary results detailing the equipment inspection ANALYSIS status and RECOMMENDATIONS.
- Motor control center.
- Motor and pump bearings.
- Equipment disconnects.
- Starter control panel.
- Chiller starter control cabinet.
- Pump motor starter control cabinet.

SEMI-ANNUAL AND QUARTERLY CHILLER PREVENTATIVE MAINTENANCE INSPECTION/SERVICE:

- Check the general operation of the unit.
- Log the operating temperatures, pressures, voltages, and amperages.
- Check the operation of the purge unit.
- Check the operation of the control unit.
- Check the operation of the lubrication system.
- Check the operation of the motor and starter.
- Analyze the recorded data. Compare the data to the original design conditions.
- Review operating procedures with operating personnel.
- Provide a written report of completed work, operating log, and indicate any uncorrected deficiencies detected.
- Controls: Inspect, calibrate, test safety controls: log cut-in, cut-off points.
- Refrigerant/Lubrication Circuits: Adjust refrigerant level with customer's refrigerant, if available.
- Compressor/Motor Assembly: Megger main compressor motor, log tighter terminals.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

Miscellaneous

- Check fans for free rotation and correct direction, if applicable.
- Check for proper flows through chiller.
- Vibration analysis.
- Inspect sight glasses, log levels.
- Log amperages/voltages/temperatures/pressures.
- Inspect thermometers/gauges.
- Analysis of log readings by factory trained service technician, report on unusual conditions.
- Generate reports on problems and conditions: log readings and compressor oil.

ANNUAL COOLER TOWER INSPECTION/SERVICE

- Record and report abnormal conditions, measurements taken, etc.
- Review logs with the customer for operational problems and trends.

General Assembly

- Clean debris from platform and surrounding area.
- Clean water sump and check condition.
- Clean float valve assembly/water level control assembly and adjust.
- Check and clean bleed offline and overflow.
- Clean tower strainers.
- Clean tower spray nozzles and eliminators.
- Flush cooling tower after cleaning.
- Check sump heaters and thermostats for calibration and proper operation.
- Inspect general tower condition for water treatment problems.
- Inspect drive belts/or couplings, check and tighten if required.
- Inspect bearings, lubricate when required.
- Inspect motors.
- Inspect tower fill for deterioration.
- Inspect for dust and dirt, wipe down motors and moving parts as required.
- Inspect fans for balance/vibration.
- Ensure that the pipe insulation is dry and not broken down.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

• Check mechanical mounts and vibration isolators for wear.

Structure

- Disassemble all screens and access panels for inspection.
- Inspect the conditions of the slats, if applicable.
- Inspect the condition of the tower fill.
- Inspect the condition of the support structure.
- Inspect the condition of the basins (upper and lower) and/or spray nozzles.
- Verify clean basins and strainer(s).
- Verify the condition and operation of the basin fill valve system.

Mechanical

- Inspect gear box for leaks.
- Inspect drive and coupling for condition and security.
- Inspect fan assembly for condition, security, and clearances (e.g. blade tip clearance).

Lubrication

- Lubricate motor bearings.
- Check gear box oil level.

Motor and Starter

- Clean the starter cabinet.
- Inspect wiring and connections for tightness and signs of overheating and discoloration.
- Check condition of the contacts for wear and pitting.
- Check contactor(s) for free and smooth operation.
- Meg the motor and record reading.
- Check disconnect terminal block for wear, tightness and signs of overheating and discoloration.
- Check the condition and operation of the basin heater Vendor(s).

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

QUARTERLY/ SEMI-ANNUAL COOLER TOWER PREVENTATIVE MAINTENANCE INSPECTION/SERVICE

General

- Check the general condition of the tower.
- Verify clean basins and strainers (upper and lower) and/or spray nozzles.
- Verify proper water level in the basin.
- Verify proper operation of the water level control device.
- Verify smooth operation of the fan(s).
- Verify proper operation of the bypass valve(s), if applicable.
- Review operating procedures with operating personnel.
- Provide a written report of completed work, operating log, and indicate uncorrected deficiencies detected.
- Inspect drive belts.
- Inspect bearings, lubricate when required.
- Cooling Tower Cleaning -(1 per year)
- Turn off and lock out cooling tower electrical disconnects.
- Fan
- Heat tape
- Basin heaters
- Close Make-up water valve to cooling tower.
- Close condenser water supply and return valve.
- Close weir gates if applicable
- Drain cooling tower
- Inspect fill and tower structure for damage and report to account manager of any findings.
- Verify use of cleaning materials needed to tower.

ANNUAL PUMPS, CONDENSOR AND PUMP CHILLED WATER INSPECTION/SERVICE:

- Record and report abnormal conditions, measurements taken, etc.
- Review customer logs with the customer for operational problems and trends.
- General Assembly

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

- Check motor shaft and pump shaft for alignment, if applicable.
- Inspect the coupling for wear.
- Verify that the shaft guard is in place and tight, if applicable.
- Verify the water flow through the pump.
- Check for leaks on the mechanical pump seals, if applicable.
- Verify proper drip rate on the pump seal packing, if applicable.
- Verify smooth operation pump.
- Clean pump strainers.
- Provide a written report of completed work, operating log, and indicate any uncorrected deficiencies detected.

Lubrication

- Lubricate the motor bearings as necessary.
- Lubricate the pump bearings as necessary.

Motor and Starter

- Clean the starter cabinet.
- Inspect wiring and connections for tightness and signs of overheating and discoloration.
- Meg the motor.
- Verify tight connections on the motor terminals.
- Check the condition of the contacts for wear and pitting, if applicable.
- Check the Vendors for free and smooth operation.
- Verify proper volts and amps.

QUARTERLY AND SEMI-ANNUAL PUMPS, CONDENSER AND PUMP CHILLED WATER INSPECTION/SERVICE

- Check for proper condenser and chilled water flow
- Check system loops, suction and discharge pressures and log.
- Check system loops temperatures and log
- Lubricate pump bearings per manufacturer's recommendations.
- Lubricate motor bearings per manufacturer's recommendations.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

- Check motor voltage and amperage, and log.
- Check for excessive vibration and noise.
- Verify the smooth operation of the pump.
- Check for leaks on the mechanical pump seals, if applicable.
- Verify proper drip rate on the pump seal packing, if applicable.

ANNUAL CONTROL SYSTEM SERVICE (Inspect, Test and Verify System Operation)

Controls and Safety

- Verify all settings in the electronic control panel.
- Inspect the control panel for cleanliness.
- Inspect wiring and connections for tightness and signs for overheating and discoloration.
- Verify the operation of the vane control system
- Verify the working condition of all indicator/alarm lights and LED/LCD displays.
- Verify the operation of the oil sump temperature control devise.
- Test high condenser pressure safety device. Calibrate and record setting.
- Test low evaporator temperature safety device. Calibrate and record setting.
- Test low oil pressure safety device. Calibrate and record setting.
- Test high motor temperature safety device. Calibrate and record.
- Test operation of chilled water pump and condenser water pump starter auxiliary contacts.
- On and off of components.
- Start and stop.
- Alarms.
- Temperature indications.
- Other applicable system variables and operations.

Inspect and Test Circuit Boards

- Processors.
- Control devices.
- Communication between devices.
- Analog inputs/outputs.
- Binary inputs/outputs.
- Input and output wiring.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

Inspect and Test Diagnostics

- Control devices.
- Back-up batteries.
- Inspect and test program operation.

QUARTERLY CONTROL SYSTEM INSPECTION/SERVICE

Inspect and Test Program Operation

- Chiller start, stop, and sequencing
- Chills water reset
- Pump sequence and rotation
- Tower fan operation

Inspect and Test Diagnostic LED's

- Control panel
- Processor
- Memory
- Communication

Inspect and Test Status Display

- Event log
- Input/output status

ANNUAL REFRIGERANT AND CO MONITOR INSPECTION/SERVICE

- Inspect location and mounting of monitor.
- Inspect location of sensor.
- Verify non-used inlets and exhausts are capped.
- Check with equipment operator for unit history.
- Check monitor connections.
- Test and calibrate sensor.

Exhibit A

Chiller Inspection/Service Requirements for Annual, Semi-Annually, Quarterly and Monthly Checklist

Case ground

- Check 115-volt main power.
- Check low voltage wiring for 0-10 VDC or 4-20ma analog wiring.

Complete Startup Procedure

- With switch in off position, energize power circuit and check voltage.
- Turn power switch on.
- Check for stability after warm-up period.

Perform Calibration

- Recalibrate monitor.
- Check calibration after reinstallation as outlined in manual.
- Check circuit board integrity.

QUARTERLY AND SEMI-ANNUAL PREVENTATIVE MAINTENANCE INSPECTION

- Inspect location and mounting of monitor.
- Inspect sensor.
- Check with equipment operation logs for unit history.
- Check Monitor Connections
- Check case ground.
- Check 115-volt main power.
- Check low voltage wiring for 0-1- VDC or 4-20ma analog wiring.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

Please Note: A copy of annual inspection reports (Vendor's form) must be forwarded to SOM's Facilities Management Department for formal review.

At a minimum, the successful vendor should complete the following tasks as part of their Annual, Semi-Annual, Quarterly and Monthly inspections.

For all inspections, the Vendor must complete the following:

- 1. Report to the Department prior to inspection;
- 2. Record and report abnormal conditions, measurements taken, etc.;
- 3. Review Department logs with the Department for operational problems with trends;
- 4. Provide a written report of completed work, operating log and indicate any uncorrected deficiencies detested; and
- 5. Record findings on inspection log.

ANNUAL HOT WATER GAS BOILERS INPSECTION/SERVICE:

General

- Secure and drain the boiler.
- Open the fire and water side for cleaning and inspection.
- Check the heating surfaces and water side for corrosion, pitting, scale, blisters, bulges, and soot.
- Inspect the refractory.
- Check the expansion tank and drain if needed.
- Clean the fire inspection glass.
- Check the blow-down valve packing and lubricate.
- Check and test boiler blow-down valve.
- Perform hydrostatic test, if required.

ANNUAL GAS TRAIN BURNER ASSEMBLY INSPECTION/SERVICE:

- Check the gas train isolation valves for leaks.
- Check the gas supply piping for leaks.
- Check the gas pilot solenoid valve for wear and leaks.
- Check the main gas and the pilot gas regulators for wear and leaks.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

- Test the low gas pressure switch. Calibrate and record setting.
- Test the high gas pressure switch. Calibrate and record setting.
- Verify the operation of the burner fan air flow switch.
- Inspect and clean the burner assembly.
- Inspect and clean the pilot igniter assembly.
- Inspect and clean the burner fan.
- Run the fan and check for vibration.
- Inspect the flue and flue damper.
- Burner control panel: Inspect for cleanliness and inspect for wiring and connections for tightness and signs of overheating and discoloration.
- Check burner controls, sequence of operations and combustion air equipment.
- Clean burner fan wheel and air dampers. Check for vibration.
- Verify tightness of the linkage set screws.
- Check the gas valves against leakage (where test cocks are provided).
- Perform Combustion analysis, adjust burner as need for optimal performance
- Check all hand valves, regulators, and automatic feed equipment;
- Adjust, repair, or replace if equipment as required

Controls and Safety

- Disassemble and inspect the low water cutoff safety device.
- Reassemble the boiler low water cutoff safety device with new gaskets.
- Clean the contacts in the program timer, if applicable.
- Check the operation of the low water cutoff safety device and feed controls.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

QUARTERELY HOT WATER GAS BOILERS INSPECTION/SERVICE

General

- Check the general condition of the unit.
- Inspect the burner.
- Adjust the burner controls to obtain proper combustion.
- Check the operation of the pressure relief valve.
- Check the operation of the low water cutoff and feed controls.
- Check the setting and test the operation of the operating and limit controls.
- Check the operation of the modulating motor.
- Lift the safety/relief valves with at least 70% of rated pressure.
- Blow down and try gauge cocks to confirm glass water level.
- Check and test boiler blow-down valve.
- Log operating conditions after the system has stabilized.
- Review operating procedures with operating personnel.

ANNUUAL HOT WATER HEATING PUMPS INSECTION/SERVICE

General Assembly

- Check motor shaft and pump shaft for alignment, if applicable.
- Inspect the coupling for wear.
- Verify that the shaft guard is in place and tight, if applicable.
- Verify the water flow through the pump.
- Check for leaks on the mechanical pump seals, if applicable.
- Verify proper drip rate on the pump seal packing, if applicable.
- Verify smooth operation pump.
- Clean pump strainers.

Lubrication

• Lubricate the motor bearings as necessary / Lubricate the pump bearings, as necessary.

Motor and Starter

- Clean the starter cabinet.
- Inspect wiring and connections for tightness and signs of overheating and discoloration.
- Meg the motor.
- Verify tight connections on the motor terminals.
- Check the condition of the contacts for wear and pitting, if applicable.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

- Check the Vendors for free and smooth operation.
- Verify proper volts and amps.

OUARTERLY HOT WATER HEATING PUMPS INSECTION/SERVICE

General

- Lubricate pump bearings per manufacturer's recommendations.
- Lubricate motor bearings per manufacturer's recommendations.
- Check suction and discharge pressures and log.
- Check motor voltage and amperage, and log.
- Check for excessive vibration and noise.
- Verify smooth operation of the pump.
- Check for leaks on the mechanical pump seals, if applicable.
- Verify proper drip rate on the pump seal packing, if applicable.

SEMI-ANNUAL AIR HANDLDING UNIT (AHU AND RTU) INSPECTION/SERVICE

<u>Tasking to be performed prior to the start of respective season (heating / cooling) to ensure proper operating conditions and uninterrupted occupant comfort.</u>

- Check and clean fan assembly.
- Lubricate fan bearings per manufacturer's recommendation.
- Lubricate motor bearings per manufacturer's recommendation.
- Check belts and sheaves. Adjust and replace as required.
- Tighten all nuts and bolts.
- Check motor mounts and vibration pads. Adjust as required.
- Check motor operating conditions.
- Inspect electrical connections and contactors.
- Lubricate and adjust associated dampers and linkage.
- Check fan operation.
- Clean outside air intake screen.
- Check and clean drains and drain pans.
- Check and clean strainers.
- Inspect filters and replace per filter schedule.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

- Check heating and cooling coils.
- Check operation of HW and CHW control valves

QUARTERLY PREVENTIVE MAINTENACE AIR HANDLDING UNIT (AHU AND RTU) INSPECTION/SERVICE

General

- Check and clean fan assembly.
- Lubricate fan bearings per manufacturer's recommendation.
- Lubricate motor bearings per manufacturer's recommendation.
- Check belts and sheaves. Adjust and replace, as required.
- Check operation and make required adjustments.

QUARTERLY PREVENTIVE MAINTENACE AIR COMPRESSOR/DRYER INSPECTION/SERVICE

- All work must be performed in accordance with Johnson Controls safety policies.
- Check with appropriate customer representative for operational deficiencies.
- Drain condensate from tank and check traps.
- Check safety relief valve.
- Check condition of pulley and belts, if applicable.
- Inspect air filters.
- Check for proper oil level in compressor.
- Lubricate motor bearings, per manufacturer's recommendations.
- Check PE switch and starter.
- Check pressure reducing station for proper operation.
- Check for proper operation of air drier.
- Check air drier condenser coil.
- Brush air dryer, condenser and cover grills as required.
- Check for unusual noise and vibration.
- Check overall condition of unit.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

COON EDUCATION BUILDING ONLY

SEMI-ANNUAL PERIMETER HEAT SYSTEM COMPREHENSIVE INSPECTION/SERVICE

General

- Check and clean strainers.
- Check and clean steam traps.
- Check Heat exchangers for proper operation.
- Check steam PRV and verify all gauges and thermos.
- Visually inspect components to ensure that all equipment is operating properly.
- Motor/pump alignment of the pump/motor coupling to ensure efficient torque.
- Check expansion tanks Inspect these tanks to make sure that the acceptance.
- Visually inspect components to ensure that all equipment is operating safety.
- Align the pump/motor coupling to ensure efficient torque.

SEMI-ANNUAL PERIMETER VARIABLE FREQUENCY DRIVES COMPREHENSIVE INSPECTION/SERVICE

- Inspect and tighten all nuts, bolts, and retaining devices on mechanical assemblies and mounting brackets.
- Verify all electrical connections are at proper torque settings.
- Clean/Change all cooling filters and grills if applicable.
- Remove all dirt and dust that has penetrated the unit interior or accumulated on the processor boards using high-pressure nitrogen.
- Verify and record all inverter settings.
- Verify and all internal power supplies, and logic outputs. Record as applicable.
- Check proper operation of DC buss capacitors.
- Check all external controls related to the operation of the inverter.

Exhibit B

HVAC Inspection/Service Requirements for Annual, Semi-Annual, and Quarterly Checklist

• Provide and recommendations for repair, parameter changes, etc. in written form.

Additional Requirements

- Vendor shall complete an operations log sheet. The log sheet shall be provided to SOM Facilities Management and shall contain records of operational, temperatures, pressures, and amperages of the HVAC equipment such as boilers and chiller under various loaded conditions. The log sheet shall be attached to the equipment in a clear envelope and maintained for one (1) year to provide analytical data and confirm dates of service.
- In the performance of this Contract, the Vendor's performance will be measured for completeness, quality of work, timeliness, and accuracy of work. Unacceptable work determined by SOM will be documented in accordance with Marshall University performance policy for evaluation and possible Contract cancellation.



Office of Purchasing

July 1, 2021

Randy Barnett Nitro Construction Services, Inc. 4300 Ist Avenue Nitro, WV 25143

Re: Contract Renewal for MU21HVACCHILL

Trecey brandolindi

Mr. Barnett,

The above referenced contract will expire August 31, 2021. Marshall University wishes to renew the contract upon written mutual agreement.

Please annotate on the bottom of this letter, with your signature and date, if you agree to renew contract MU21HVACCHILL.

Effective September 1, 2021 through August 31, 2022 under the same terms and conditions.

Enclosed is a Purchasing Affidavit which requires signature and notarization as well.

If you have any questions, please feel free to call me at 304-696-3157

Sincerely,

Tracey Brown-Dolinski

Assistant Director of Purchasing

I agree to renew the current contract # MU21HVACCHILL an additional twelve (12) month period under the same terms and conditions.

Yes No

Yes, subject to the following changes indicated below or in the attached letter.

Yes, subject to the following changes indicated below or in the attached letter.

July 15 202
Signature

Date

Honey

Printed Name

HVAC Division Manage

Title

Comments:

STATE OF WEST VIRGINIA Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name:	
Authorized Signature:	Date: 7/15/21
State of West Virginia	
County of Putnam, to-wit:	
Taken, subscribed, and sworn to before me this $\underline{15}$ day of	July , 20 <u>21</u> .
My Commission expires	
OFFICIAL SEAL AFFIX SEAL HEREATE OF WEST VIRGINIA NOTARY PUBLIC Jennifer L Kelly 11 Lynn Ln Scott Depot, WV 25560 Second Depot, WV 25560 Second Depot, WV 25560	Purchasing Affidavit (Revised 01/19/2018)

Vendor/Customer

<u>Menu</u>

	Vendor/Customer	Legal Name		Alias/DBA	Vendor Active Status	Customer Active Status	Previous Name			
v	000000114773	NITRO CONSTRUCTION SERV	ICES INC		Active	Inactive	·			
	000000114774 Nitro Mechanical Services Active Inactive									
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▶ Accounts Receivable										
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	► I ocation Information									

F Location information	MU21HVA	CCHILL co1 Page 34
► Fee and Vendor Compliance Holds		
Fee Exempt :	Tax Clearance :	
Registration Application Date : 08/06/2020	Unemployment Insurance :	
Registration Effective Date : 09/21/2020	Worker's Compensation :	
Registration Expiration Date : 09/21/2021	Secretary of State Registration :	
Pre-Registration Code :	Federal Debarred :	
▶ Executive Compensation		
Executive Compensation		
▶ Additional Information		
- Additional Information		
▶ Travel		
<u> </u>		
<u>Top</u>		
CREATE DOCUMENT> Create New Record Modify Existing	Record	
UPDATE> <u>Headquarters</u> <u>Add 1099 Information Enti</u>	ry Add 1042-S Reporting Information Entry	
Vendor Business Types By Commodity		
SEARCH BY> <u>Master Contacts</u> <u>Master Addresses</u>	<u>Vendor Commodity</u> <u>Vendor Addresses</u>	Vendor Business Types
<u>Vendor Service Areas</u> <u>VCM Query</u> <u>Historical V</u>	<u>Vendor Information</u> <u>Vendor Notes</u>	
Vendor Transaction History		