

**Sauk Valley Community College
August 28, 2023**

Action Item 5.7

Topic: Purchase/Contract Approval – Trane Technologies Chiller Rebuild

College Health Metric: Campus Environment – College facilities and grounds are clean and updated. The campus is safe, secure and welcoming.

Presented By: Dr. David Hellmich and Rich Groleau

Presentation:

One of the Trane Water Cooled Centrifugal Chillers has developed an oil leak and needs repair. The timeframe for rebuilding a chiller is 10-15 years; the chillers were installed in 2009 and are at the age of needing rebuilding. This rebuild would extend the life of the unit another 10 to 15 years. The most advantageous of the options is a complete rebuild rather than fix the oil leak. To repair the oil leak would be \$26,901.80 and a rebuild would be \$87,927.06. As part of the rebuild, an eddy current analysis to check the thickness of the tubes inside the chiller costing \$13,935.62 will need to be completed.

Contracts for maintenance or services of, or provision of repair parts for, equipment that are made with the manufacturer or authorized service agent of that equipment where the provision of parts, maintenance, or servicing can best be performed by the manufacturer or authorized service agent are exempt from competitive bidding under the Public Community College Act (110 ILCS 805/3-27.1) and Board Policy 305.01.

This contract will be funded through restricted use funding bond proceeds.

Recommendation:

The administration recommends the Board accept the quote from Trane Technologies of Willowbrook, Illinois with a total amount of \$101,862.68 for the Chiller rebuild to be paid from restricted use bond proceeds.



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TECHNOLOGIES

Trane U.S. Inc.
7100 S Madison St
Willowbrook, IL 60527
Phone: (630) 734-3200

July 14, 2023

Richard Groleau
Sauk Valley Community College
173 II Route 2
Dixon, IL 61021
U.S.A.

Site Address:
Sauk Valley Community College
173 II Route 2
Dixon, IL 61021
U.S.A.

Attention: Richard Groleau

Project Name: Trane Water Cooled Centrifugal Chiller Overhaul 2023

Trane is pleased to present our proposal to perform the following work on the equipment listed below at your facility. The services in this proposal will be performed using Trane's Exclusive Service Procedures to ensure you get full benefit of our extensive service experience, coupled with the distinct technical expertise of an HVAC equipment manufacturing leader. Our innovative procedures are environmentally and safety conscious and aligns expectation of work scope while providing efficient and productive delivery of services.

Equipment	Manufacturer	Model Number	Serial Number
Water Cooled Centrifugal Chiller	Trane	CVHF049FE3Y0ACM2658W9F8TBA0 0000070C1004CLS00002B100A	L09K02027

Scope of Service – Trane Water Cooled Centrifugal Chiller Overhaul

This "Scope of Services" includes labor and materials to perform an overhaul on the chiller listed above.

- **General**
 - Stage equipment and tools onto job-site.
 - Recover refrigerant and store in approved EPA containers.
 - Compare recovered refrigerant amount to chiller nameplate charge and record.
 - Remove and dispose of oil per EPA guidelines.
 - Supply all necessary tools and rigging for disassembly of machine.
 - Replace gaskets & o-rings.
- **Compressor**
 - Check and note all compressor tolerances during disassembly.
 - Inspect compressor impellers for defects.
 - Replace terminal board gasket.
 - Replace compressor motor terminal stud o-rings.
- **Compressor Motor**
 - Check and note all motor section tolerances during disassembly.
 - Perform five-point tolerance check on compressor rotor tail bearing and log.
 - Visually inspect compressor motor stator and rotor for signs of defect.
 - Remove compressor motor stator from volute and replace o-ring gasket.

- Replace motor bearings.
- Replace sight glass.
- **Lubrication System**
 - Disassembly oil sump.
 - Inspect lubrication system.
 - Replace oil pump, motor, and heater.
 - Replace oil pump start relay and capacitor.
 - Clean oil sump and reassemble with new o-rings and gaskets.
 - Pressure test lubrication system.
 - Replace oil filter and fill system with new oil.
 - Replace refrigerant filter drier.
 - Verify proper operation of lubrication system.
- **First Stage Vane Assembly**
 - Inspect first stage vane assembly.
 - Replace first stage tang arm operator.
- **Second Stage Vane Assembly**
 - Inspect second stage vane assembly.
- **Rupture Disk**
 - Replace rupture disk.
 - Replace rupture disk gaskets.
- **Economizer**
 - Replace economizer flange gaskets.
- **Reassembly**
 - Reassemble compressor motor section using R-123 refrigerant compatible gaskets and o-rings per factory specifications.
 - Install a balancing nut on the motor shaft and “Spin Balance”.
 - Reassemble compressor section using new gaskets and o-rings per factory specifications.
 - Log assembled tolerance during re-assembly of compressor and motor sections and supply written report of all assembled tolerances.
 - Perform leak test of complete assembled machine, evacuate to a minimum of 500 Microns and place in 24-hour vacuum test.
 - Charge machine with existing R-123 refrigerant.
 - Reinsulate chiller where existing insulation was disturbed and where it is unfit for continued use.
 - Touch up paint as needed.
 - Checkout and verify operation of unit.
 - Review work performed with customer representative and remove tools and equipment.

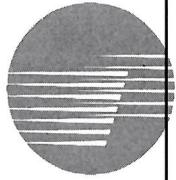
Total Price (Excluding Sales Tax): \$87,927.06

Scope of Service – Trane Water Cooled Centrifugal Chiller Starter Refresh

This “Scope of Services” includes labor and materials to perform a starter refresh on the chiller listed above.

- Demo and dispose of existing starter cabinet contactors.
- Replace main start/stop/run contactors with new contactors.
- Verify proper operation of the starter.

Total Price (Excluding Sales Tax): \$24,443.48



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Attention: Richard Groleau

Project Name: Trane Water Cooled Centrifugal Chiller Eddy Current Analysis 2023

Trane is pleased to present our proposal to perform the following work on the equipment listed below at your facility. The services in this proposal will be performed using Trane's Exclusive Service Procedures to ensure you get full benefit of our extensive service experience, coupled with the distinct technical expertise of an HVAC equipment manufacturing leader. Our innovative procedures are environmentally and safety conscious and aligns expectation of work scope while providing efficient and productive delivery of services.

Equipment	Manufacturer	Model Number	Serial Number
Water Cooled Centrifugal Chiller	Trane	CVHF049FE3Y0ACM2658W9F8TBA0 0000070C1004CLS00002B100A	L09K02027

Scope of Service – Trane Water Cooled Centrifugal Chiller Eddy Current Analysis

This "Scope of Services" includes labor and materials to perform an eddy current analysis on the chiller listed above.

- Initial Site Inspection
- Isolate Unit and Lock Out Tag Out
- Drain Condenser and Evaporator Tube Bundles
- Drop Condenser and Evaporator Tube Bundle Heads (One Side)
- Brush Condenser and Evaporator Tube Bundles Clean
- Perform Eddy Current Analysis on Condenser and Evaporator Tube Bundles
- Reattach Condenser and Evaporator Tube Bundle Heads with New Gaskets/O-Rings
- Refill Bundles and Return Unit to Normal Service
- Clean Up Jobsite
- Provide a Report on Tube Bundle Health and Recommend Any Needed Actions

Total Price (Excluding Sales Tax): \$13,935.62

Clarifications

- Any service not listed is not included.
- Work will be performed during normal Trane business hours.
- Any extra steps or procedures needed to be performed by Trane technicians as a result of COVID-19 are not included and will be extra.
- Existing bolts must turn out manually with a wrench. Any bolts found broken, break during dis-assembly, require heat or other supplemental forms of extraction, break at re-assembly or re-threading are an extra to this proposal.
- If tube bundles require a de-scaling agent for cleaning, this is not included and will be quoted separately.
- Trane will not perform any work if working conditions could endanger or put at risk the safety of our employees or subcontractors.

We are committed to providing you with solutions that make your buildings work better. When you work with Trane you get the full benefit of our global service experience coupled with the distinct technical expertise of a leading HVAC equipment manufacturer.

We thank you for giving us an opportunity to quote on this service and hope we have a chance to work with you and your staff in the future.

Sincerely,

Charles Passarelli
Account Manager
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