

All Agency Project Request

2013 - 2015 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Madison	285-0A-0529	HEATING & COOLING PLANT-CHARTER ST

<u>Project No.</u>	13E4T	<u>Project Title</u>	CSHP CW Dist Pump VFD Repl Inst
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Project Intent

This project installs a new variable frequency drive (VFD) system for a constant speed 4,160-volt 1,000 HP chilled water distribution pump located at the Charter Street Heating Plant (CSHP).

Project Description

Project work includes furnishing and installing a new 4,160-volt VFD with a bypass motor starter. The 4,160-volt circuit and over-current protection serving the 1,000 HP motor will be modified per VFD manufacturer recommendations. Existing chilled water pressure and flow sensors will be wired to the VFD controller as input for chilled water flow control. The VFD controller output will be connected to the existing chilled water plant digital control system for indication of all run and fault conditions. New ductwork will connect the VFD cabinet to an existing air handling system to direct filtered cooling air to the VFD enclosure. An equipment mezzanine will be required to locate the VFD in an area that complies with NEC access requirements for 4,160-volt equipment.

Project Justification

Controlling both chilled water distribution pumps will maximize operating flexibility and provide energy efficient delivery of chilled water to campus buildings. There are two (2) 1,000 HP chilled water distribution pumps at CSHP and VFD control was recently added to one the pumps (10J1M). The existing VFD does not have a bypass motor starter. The proposed VFD must include a bypass starter in case of controller failure within either VFD or if the cooling air is disrupted and a temperature trip occurs. The bypass starter enables pump operation at full constant speed to ensure chilled water delivery to campus until the VFD failure(s) are addressed. Providing cooling air to the VFD enclosure will ensure equipment longevity and increased operating reliability.

A/E Consultant Requirements

Consultants should have specific expertise and experience in the design and coordination of the installation of electrical equipment in industrial and institutional buildings as part of a design team. Work includes site surveys, acquiring field data, and verifying as-built conditions to assure accurate development of design and bidding documents, and production of necessary design and bidding documents. Consultants should indicate specific projects from past experience (including size, cost, and completion date) in their letter of interest and when known, include proposed consulting partners and specialty consultants.

A/E Selection Required?

Commissioning

- Level 1
 Level 2

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Project Budget

Construction Cost:	\$425,600	
Haz Mats:	\$0	
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Construction Total:	\$425,600	
Contingency: 15%	\$63,800	
A/E Design Fees: 8%	\$34,000	
DFD Mgmt Fees: 4%	\$19,600	
Equipment/Other:	\$0	
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	\$543,000	

Funding Source

GFSB - Utilities Repair & Renovation [Z080]	\$396,400
PRSB - []	\$0
Agency/Institution Cash [AGF0]	\$146,600
Gifts	\$0
Grants	\$0
Building Trust Funds [BTF]	\$0
Other Funding Source	\$0
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	\$543,000

Project Schedule

SBC Approval: 08/2013
 A/E Selection: 09/2013
 Bid Opening: 09/2014
 Construction Start: 10/2014
 Substantial Completion: 05/2014
 Project Close Out: 07/2014

Project Contact

Contact Name: Jeffrey A. Pollei, P.E.
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 Telephone No.: (608) 890-1067 x

Project Scope Consideration Checklist

- | | <u>Y</u> | <u>N</u> |
|--|-------------------------------------|-------------------------------------|
| 1. Will the building or area impacted by the project be occupied during construction? If yes, explain how the occupants will be accommodated during construction.

<i>All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Is the project an extension of another authorized project? If so, provide the project #... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Are hazardous materials involved? If yes, what materials are involved and how will they be handled?

<i>Hazardous materials abatement is not anticipated on this project. Comprehensive building survey inventory data is not available on Wisconsin's Asbestos & Lead Management System (WALMS) <http://walms.doa.state.wi.us/>.</i> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?

<i>All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. Are other projects or work occurring within this project's work area? If yes, provide the project # and/or description of the other work in the project scope. | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III?
Type III.
8. Is the facility listed on a historic register (federal or state), or is the facility listed by the Wisconsin Historical Society as a building of potential historic significance? If yes, describe here.
9. Are there any other issues affecting the cost or status of this project?
10. Will the construction work be limited to a particular season or window of opportunity? If yes, explain the limitations and provide proposed solution.
Project work is seasonal. Preferred project work schedule should be limited to late late fall through early spring months if possible.
11. Will the project improve, decrease, or increase the function and costs of facilities operational and maintenance budget and the work load? If yes, to what extent?
Completion of this project will decrease operational maintenance costs.
12. Are there known code or health and safety concerns? If yes, identify and indicate if the correction or compliance measure was included in the budget estimate, or indicate plans for correcting the issue(s).
13. Are there potential energy or water usages reduction grants, rebates, or incentives for which the project may qualify (i.e. Focus on Energy <<http://www.focusonenergy.com>> or the local utility provider)? If yes, describe here.
14. If this is an energy project, indicate and describe the simple payback on state funding sources in years and the expected energy reduction here.