

All Agency Project Request

2011 - 2013 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Madison	285-0A-0049	HEATING & COOLING PLANT-WALNUT ST

<u>Project No.</u>	13B2S	<u>Project Title</u>	WSHP CW Dist Pump VFD Repl
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Project Intent

This project replaces two (2) variable frequency drive (VFD) systems for the 4160-volt and 1,000 HP chilled water distribution pumps to allow effective, energy efficient pumping of chilled water throughout campus.

Project Description

Project work includes removing the two (2) Toshiba 4160-volt VFDs and replacing them with new 4,160-volt VFDs. The new drive system will include 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. Chilled water pressure and flow sensor signals will be routed to the VFD controller input for chilled water flow control. The VFD controller output will be connected to the chilled water plant digital control system for indication of all run and fault conditions. The supply air ductwork, overhead translucent vinyl retracting roofs, and vinyl strip doors will be modified to accommodate the new VFDs size and air inlet locations.

Project Justification

The 4160-volt Toshiba VFD's are at the end of their useful life and need to be replaced. During the peak cooling season last year the VFDs were unable to operate continuously and needed to be bypassed as the outdoor temperatures approached 100 degrees Fahrenheit. During the winter, WSHP is the base load chilled water plant for campus when the cooling loads are low and the benefits of the variable speed drives are the greatest. Failure of one VFD would eliminate the redundancy and failure of both VFDs would increase the operating cost of the pumps significantly.

A/E Consultant Requirements

A/E Selection Required?

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.

Commissioning

- Level 1
 Level 2

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<u>Project Budget</u>	<u>Funding Source</u>	<u>Total</u>
Construction Cost:	\$720,000	GFSB - Utilities Repair & Renovation [Z080] \$726,000
Haz Mats:	\$0	PRSB - [] \$0
Construction Total:	\$720,000	Agency/Institution Cash [AGF0] \$193,000
Contingency: 15%	\$108,300	Gifts \$0
A/E Design Fees: 8%	\$57,600	Grants \$0
DFD Mgmt Fees: 4%	\$33,100	Building Trust Funds [BTF] \$0
Equipment/Other:	\$0	Other Funding Source \$0
	\$919,000	\$919,000

Project Schedule

SBC Approval: 05/2013
 A/E Selection: 06/2013
 Bid Opening: 03/2014
 Construction Start: 07/2014
 Substantial Completion: 11/2014
 Project Close Out: 03/2015

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?

<i>This project will improve the reliability and energy efficiency of the chilled water system.</i> | <input checked="" type="checkbox"/> | <input 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 and will be completed in the fall after the cooling season and prior to winter operations.
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.