

# All Agency Project Request

2011 - 2013 Biennium

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<b><u>Agency</u></b>	<b><u>Institution</u></b>	<b><u>Building No.</u></b>	<b><u>Building Name</u></b>
University of Wisconsin	Oshkosh	285-0F-0061	HEATING PLANT

<b><u>Project No.</u></b>	12B2Q	<b><u>Project Title</u></b>	Central Plant Cooling Towers Repl
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## **Project Intent**

This project provides pre-design and design services to replace the cooling towers serving two 1400 ton electrical centrifugal chillers located at the campus Central Chiller Plant to ensure both chillers can be operated at full chiller nameplate capacity to provide adequate campus chilled water system capacity to serve campus load.

## **Project Description**

Project work includes replacement of the cooling towers serving two 1400 ton chillers at the campus. The towers will be replaced in the same general location with appropriate visual screening. The cooling tower layout will also consider future replacement of the existing 450 ton cooling tower with a 1400 ton cooling tower. Items to be considered in the initial pre-design study include but are not limited to demolition requirements, structural modifications, piping modifications, and electrical and control modifications. Municipal codes verification must include noise emission and noise levels at property lines and zoning restrictions including building height. Computer dispersion modeling of the adjacent boiler stack emissions and cooling tower drift may be needed for environmental compliance. Existing solar thermal panel locations and possible sun shading will be reviewed and if necessary modified.

## **Project Justification**

The Central Cooling Plant was constructed in 1999 as an addition to the campus heating plant. The original installation included one 1400 ton electrical centrifugal chiller and one 450 ton electrical centrifugal chiller and associated pumps and cooling towers. In 2005, a second 1400 ton electrical centrifugal chiller and associated pumps and cooling towers were installed.

The existing cooling towers recirculate discharge air resulting in high discharge water temperatures and chiller operational problems.

## **A/E Consultant Requirements**

A/E Selection Required?

Consultants should have specific expertise and experience in the design and coordination of campus chilled water systems, chilled water production and distribution equipment, cooling towers and related electrical and mechanical control systems 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.

The consultant will verify project scope and budget estimates, and recommend modifications as required to complete the specified project intent. The consultant will prepare a pre-design document to establish an appropriate project scope, budget, and schedule prior to the university seeking authority to construct from the Board of Regents and State Building Commission. The pre-design services will include the technical and cost evaluation of the following items:

- Examine existing towers and screen wall to determine demolition scope and sequence
- Provide cooling tower structure modifications to support new towers.
- Assess the capacity of the existing condenser water pumping system to supply new towers.
- Examine the existing boiler emission permits to ensure new tower operation do not cause permit violations. Perform tower air discharge modeling to ensure WDNR compliance.

## **Commissioning**

- Level 1  
 Level 2

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- Verify local zoning and building code requirements are met including noise emissions and building height.
- Provide screen wall design options for campus review for esthetic purposes.
- Verify capacity of electrical panels to serve new loads.
- Verify capability and capacity of building and chiller control systems.
- Examine location of solar panel relative to tower shading and propose new locations if needed.
- Perform structural analysis of existing roofs for snow loading changes due to screen wall modifications.

The final design solution will include the renovation components identified in the pre-design evaluation and accepted by DSF and UW.

<b><u>Project Budget</u></b>	<b><u>Funding Source</u></b>	<b><u>Total</u></b>
Construction Cost: <span style="float: right;">\$870,000</span>	GFSB - Utilities Repair & Renovation [Z080]	\$0
Haz Mats: <span style="float: right;">\$0</span>	PRSB - Utilities Repair & Renovation [T570]	\$0
Construction Total: <span style="float: right;">\$870,000</span>	Agency/Institution Cash [AGF0]	\$19,000
Contingency: 15% <span style="float: right;">\$130,400</span>	Gifts	\$0
A/E Design Fees: 8% <span style="float: right;">\$69,600</span>	Grants	\$0
DFD Mgmt Fees: 4% <span style="float: right;">\$40,000</span>	Building Trust Funds [BTF]	\$81,000
Equipment/Other: <span style="float: right;">\$0</span>	Other Funding Source	\$0
<b>\$1,110,000</b>		<b>\$100,000</b>

### **Project Schedule**

- SBC Approval: 06/2012
- A/E Selection: 03/2012
- Bid Opening: 08/2012
- Construction Start: 12/2012
- Substantial Completion: 04/2013
- Project Close Out: 08/2013

### **Project Contact**

- Contact Name: Steven A. Arndt
- Email: <arndt@uwosh.edu>
- Telephone No.: (920) 424-3102 x

### **Project Scope Consideration Checklist**

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|   | <b><u>Y</u></b> <b><u>N</u></b>                              |
| 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. | <input checked="" type="checkbox"/> <input type="checkbox"/> |
| All project work will be coordinated through campus physical plant staff to minimize disruptions to daily operations and activities.                              |  |
| 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?  | <input type="checkbox"/> <input checked="" type="checkbox"/> |

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/>>.

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4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?
5. Will the project impact the heating plant, primary electrical system, or utility capacities supplying the building? If yes, to what extent?
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.
7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III?  
Type II.
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 fall, winter, and/or 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.