All Agency Project Request

2009 - 2011 Biennium

Agency	Institution	Building No.	Building Name
University of Wisconsin	Milwaukee	285-0B-1915	HEATING PLANT - CENTRAL

Project No. 10J1Q **Project Title** Htg Plnt CW Sys Strainer Repl

Project Intent

This project replaces the condenser water strainers on two chillers to improve operations and energy efficiency and to reduce operational maintenance costs.

Project Description

Project work includes replacing two manually operated basket strainers with automatically operated quad basket strainers that protect the condenser tube bundles for Chillers No. 1 and No. 2. These devices enable mussels and plant material to be removed from the Lake Michigan water (used for condensing) and allow for automatic basket cleaning during chiller operation. This project also automates the strainer cleaning cycles, installs new strainer controls, re-pipes oil cooler and air ejector cooling water to supply them with filtered water, and installs an 8-inch hot well drain.

Project Justification

The central Heating and Cooling plant provides cooling to campus buildings using two 2,750-ton steam driven York chillers and one 3,000-ton electric drive Carrier chiller. These chillers use a lake water condenser water system to condense refrigerant gas rejecting heat collected from campus buildings to Lake Michigan. The use of lake water for refrigerant condensing instead of cooling towers saves hundreds of thousands of dollars each cooling season and is essential to the operation of the plant's chillers. Due to the invasion of a new mussel (Quagga Mussels) in Lake Michigan, and a subsequent increase in lake plant growth, increased solids in lake water pumped to the plant can block the chiller refrigerant condensers. Any reduction of cooling water due to plugged chiller condensers increases power consumption, increases the cost per ton of cooling produced, decreases chiller capacity, and causes unscheduled shut down of chiller equipment. This project will upgrade the strainers to remove smaller particles from the lake water to prevent blocking of the chiller condensers and will convert the manual strainer back flush cycles to automatic operation. A similar project was implemented in 2008 to automate the strainer for the adjacent Carrier chiller, this project will upgrade the strainers on the two remaining York chillers.

A/E Consultant Requirements

☑ A/E Selection Required?

Consultants should have specific expertise and experience in the design and coordination of water filtration 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.

Commissioning

☑ Level 1

☐ Level 2

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Project Budget		
Construction Cost:		$158,500
Haz Mats:		$600
Construction Total:		$159,100
Contingency:	15%	$23,900
A/E Design Fees:	8%	$12,700
DFD Mgmt Fees:	4%	$7,300
Equipment/Other:		$0
		$203,000

Funding Source	Total
GFSB - Infrastructure [Z450]	$170,500
PRSB - []	$0
Agency/Institution Cash [AGF0]	$32,500
Gifts	$0
Grants	$0
Building Trust Funds [BTF]	$0
Other Funding Source	$0
	$203,000

Project Schedule

SBC Approval:	12/2010
A/E Selection:	01/2011
Bid Opening:	08/2011
Construction Start:	11/2011
Substantial Completion:	04/2012
Project Close Out:	07/2012

Project Contact

Contact Name:	Mark Kazmierski
Email:	<mkaz@uwm.edu>
Telephone No.:	(414) 229-5475 x

Project Scope Consideration Checklist

	Y	N
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.	☑	☐
All project work will be coordinated through campus physical plant staff and heating plant to minimize disruptions to daily operations and activities.		
2. Is the project an extension of another authorized project? If so, provide the project #...	☐	☑
3. Are hazardous materials involved? If yes, what materials are involved and how will they be handled?	☑	☐
Required hazardous materials abatement has been included in the estimated project schedule and project budget. Comprehensive building survey inventory data is available on Wisconsin's Asbestos & Lead Management System (WALMS) <http://walms.doa.state.wi.us/>.		
4. Will the project impact the utility systems in the building and cause disruptions? If yes, to what extent?	☐	☑
5. Will the project impact on the utility capacities supplying the building? If yes, to what extent?	☐	☑
6. Will the project impact the heating plant or the primary electrical system supplying the campus or institution? If yes, to what extent?	☐	☑
7. Have you identified the WEPA designation of the project...Type I, Type II, or Type III?	☑	☐
Type III.		
8. Is the project affected by historic status?	☐	☑

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.