

All Agency Project Request

2005-07 Biennium

<u>Agency</u>	<u>Institution</u>	<u>Building No.</u>	<u>Building Name</u>
University of Wisconsin	Stevens Point	285-0K-0025	G. STEIN - HEATING PLANT
<u>Project No.</u>	06B2E	<u>Project Title</u>	Htg Plnt Boiler/Deaerator Repl

Project Scope

This project replaces the 15,000 PPH summer boiler (Boiler No. 3) with a new higher efficiency 30,000 PPH boiler, and replace the 100,000 PPH deaerator with a new unit of the same capacity. The project includes an economizer for the new summer boiler; and new controls, valves, and trim for both the new summer boiler and deaerator. Project work also includes replacing the exterior casings, insulation, and refractory on the two coal fired boilers (Boiler No.'s 1 and 2).

Project Justification

Summer Boiler: The 15,000 PPH boiler, originally installed at another location in 1963, was relocated to the heating plant a year later. In 1964, the heating plant served a total of 811,000 GSF, and presently serves more than 2.4 million GSF with an additional 120,000 GSF scheduled in the next three years. The peak summer loads exceed the existing boiler's capacity and require the use of the plant's 100,000 PPH gas/oil boiler or one of the 45,000 PPH boilers that normally fires coal but uses gas in the summer months. Both options are inefficient, especially at low loads.

Deaerator: The deaerator was also installed in 1964. In 1990, three circumferential welds, two longitudinal welds, and two nozzle welds were performed to repair cracks. An inspection in May 2002 revealed pitting below the water line throughout the tank. The deaerator is ten years beyond its predicted lifespan. The deaerator is critical to the function of the heating plant. It is a large piece of equipment with asbestos containing exterior insulation. It would be very difficult and time consuming to replace on an emergency basis.

Coal Fired Boiler Casing Replacement: The coal fired boilers are also 40 years old and are the primary boilers. The boiler casing metal panels have corroded and are distorted from hot spots caused by insulation and refractory failure. The casings have been patched over the years to prevent combustion gases from escaping into the plant. The casing repairs are necessary to assure that the boilers are able to operate safely and efficiently for another 20 years.

A/E Consultant Requirements

A/E Selection Required?

Consultants should have specific expertise and experience in the design and coordination of the construction and maintenance of high pressure steam heating plant equipment and systems. Work includes site surveys, acquiring field data, and verifying as-built conditions to assure accurate development and production of 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.

All Agency Project Request

2005-07 Biennium

The space occupied by the existing small summer boiler must be assessed to insure that it can accommodate the new larger summer boiler. Removal of the existing boiler will temporarily limit the flexibility of having multiple boilers available while the summer boiler is out of service. The plant has a second deaerator that can be used with Boiler No. 4.

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?

The potential steam production of the plant will be doubled with the new larger summer boiler.

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.

As noted above in checklist item no. 1, the deaerators and boilers affected by the project can only be taken out of service during the summer months when the campus steam load is minimized.