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*Request for Proposal for*  
**Menasha Utilities**  
Menasha, WI

for  
**Option 1: Resume Operation of River  
Street Power Plant**  
**Option 2: Purchase Equipment/  
Building / Land from River  
Street Power Plant**

August 26, 2013

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# **Menasha Utilities Menasha, Wisconsin**

## **Request for Proposals**

### **Option 1: Resume Operation of River Street Power Plant Option 2: Purchase Equipment/Building/Land from River Street Power Plant**

**Notice of Intent to Bid Due: September 20, 2013  
Proposals Due: November 8, 2013**

#### **Introduction**

Menasha Utilities (MU or Utility) is seeking a party to purchase its River Street Power Plant which has electric generation and steam production capabilities. The transaction can either be structured as a purchase of the facilities with the intent of continued operation, or as a transaction with the intent to purchase the facilities including the equipment, building, and land. The equipment purchase option could either be for the purpose of being used in another application, or for salvage value. This Request for Proposal (RFP) is seeking to identify parties interested in either option. The timeline and process is structured to allow parties to indicate interest in the project and also include adequate time for parties to perform necessary due diligence before proposing on the transaction.

#### **Background Information**

In 1912, the City installed a 225 hp. diesel-generating unit and began furnishing electric light and power for domestic and commercial purposes. In 1913, another 225 hp. diesel unit was added to meet increasing demands. The continuing demand for electricity resulted in the installation of a 600 kW generator in 1930. The total capacity of the plant at that time was 3.6 MW.

The first two River Street steam turbines went on line in 1949 and were rated at 4 MW each. This provided the Utility with additional capacity for maintenance outages and emergencies. A third unit, with a rated capacity of 7.5 MW, was built in 1956; and another unit with a capacity of 13.68 MW was installed in 1963. The total present day capacity of the River Street Power Plant is at 24.3 MW.

The major industry in Menasha is the pulp and paper industry which uses significant amounts of both electric power and industrial steam. This pulp and paper production in Menasha is an important part of the economy and culture.

Starting in 2004, the Utility invested over \$40 million in rebuilding boilers, upgrading controls, refurbishing turbines and equipment, installing a new turbine, installing a steam/condensate system, as well as the environmental upgrades listed below. The reason for the upgrade to the system was to create a co-generation facility and provide steam to industrial customers in Menasha who were using natural gas-fired boilers to generate steam for production.

With the significant increases in natural gas prices during that period, there became greater interest in evaluating alternatives for supplying steam for the mills. To reduce steam production costs, MU proposed to supply steam to the paper mills from the Menasha Power Plant. In order to facilitate the transaction, MU constructed new steam and condensate pipelines to three mills. To make the steam supply system as efficient as possible, MU also installed a new back pressure steam turbine to reduce the high pressure steam from the existing boilers to a pressure suitable for the mills. With these changes, the River Street Plant became a high efficiency combined heat and power (CHP) plant with the thermal efficiency increasing from approximately 25 to more than 70 percent. Power sales to Midcontinent Independent System Operator (MISO) began in April 2006, and CHP plant operations provided both industrial steam and electric generation output for the period from June 2006 through October 2009. The economics of providing steam to the plants from the CHP facilities became more challenging with the decrease of natural gas prices, and the plant was no longer economic to continue.

### **Future Operational Considerations**

The electric output from the Menasha facility can be sold in the MISO market, and the Utility is willing to assign the interconnection agreement to allow the transaction to occur. The electric output cannot be sold to Menasha directly. In addition, the steam distribution facilities are still intact, and currently only two of the three customers expressed interest in steam for their production. The 5 to 35kV switchgear will remain at the facility for continued operations; however, it would be removed if the intent is purchasing the plant for scrap or resale.

## **Plant Environmental Improvements**

In an effort to reduce air emissions, MU made several improvements to the facility. First, MU began using a very low sulfur Powder River Basin (PRB) coal. To better accommodate this coal, MU also improved the existing coal handling system. These improvements reduced coal handling fugitive dust emissions by eliminating outdoor coal unloading, storage, and handling. Next, MU replaced the existing electrostatic precipitator on Boilers 3 and 4 with high efficiency fabric filter baghouses. MU also made upgrades to the ash handling system to reduce fugitive emissions.

## **Environmental Compliance Issues**

In June 2009, the United States Environmental Protection Agency served Menasha Utilities with a Notice of Violation and Finding of Violation alleging that certain activities performed at the steam utility were undertaken without proper authorizations under the Clean Air Act. The City of Menasha and Menasha Utilities have contested the alleged violations and are communicating with the EPA in an attempt to work out a resolution to these environmental issues in a cooperative fashion.

## **Boilers**

The Menasha Utilities River Street Plant Boilers 3 and 4 are of similar design. The general design specifications for these boilers are summarized in the following Table 1.

Both Boilers 3 and 4 are industrial type steam generators housed inside a masonry tile block and brick building. The boilers are field erected, two drum, bent tube, natural circulation, water tube Stirling power boilers with water-walled furnaces and superheaters. The boilers can be further classified as overfeed, spreader stoker-fired boilers with traveling grate ash removal. The draft system of the boilers is a balanced draft system operating at a slightly negative pressure of approximately 0.15 inches of water column. The boilers also utilize fly ash re-injection as well as internal mechanical dust separators, tubular air heaters, and economizers. The ID fans are located on the hot side of the flue gas stream between the boiler and the current fabric filter baghouse which was upgraded from an electrostatic precipitator. The baghouse is designed with a separate chamber for each boiler and crossover capabilities to facilitate on line maintenance. The outlet of each chamber discharges to a common stack. Menasha Utilities River Street Plant Boilers 3 and 4 are industrial stoker-fired boilers. These boilers were originally designed to fire high sulfur, high Btu Illinois Basin coals. These boilers have a combined

total heat input capacity of 316 mmBtu per hour.

<b>Table1</b>		
<b>BoilerUnits</b>		
	<b>Boiler#3</b>	<b>Boiler#4</b>
ServiceDate	1956	1964
Manufacturer	Springfiled Boiler Company	Rile Stoker Corporation
BoilerType	StirlingPowerBoiler WaterTube	StirlingPowerBoiler WaterTube
Firing Type	Overfeed-SpreaderStoker TravelingGrate	Overfeed-SpreaderStoker TravelingGrate
HeatInputCapacity, mmBtu/hr	131	202
SteamCapacity(lbs/hr)	90,000	130,000
SteamPressure	725	875
FurnaceVolume(CnFeet)		6150
AirHeaterType	Tubular	Tubular
OverfireAir	FrontUpper-RearUpper&Lower	FrontUpper-RearLower

Boilers 1 and 2 are still located in the facility; however, they were decommissioned and have not operated since the early 1980s.

<b>BoilerUnits</b>		
	<b>Boiler#1</b>	<b>Boiler#2</b>
ServiceDate	1946	1949
Manufacture	Wickes	Wickes
Firing Type	Stoker	Stoker
SteamCapacity(lbs/hr)	75,000	75,000
SteamPressure	625	625

### **Turbine/Generating Units**

TheMenashaUtilitiesRiverStreetTurbines3and4arecondensingturbineswithmulti-stagedextractionsavailable. ThegeneraldesignspecificationsfortheseboilersaresummarizedinTable2 below.

Turbine5isabackpressureunitwithapressureof250psig,aninletpressureof850psig,and inductionpressureof650psig. Thegeneraldesignspecificationsfortheseboilersare also summarizedinTable2.

<b>Table2</b>			
<b>Turbine/GeneratingUnits</b>			
	<b>Unit#3</b>	<b>Unit#4</b>	<b>Unit #5</b>
<b>Turbine</b>			
Manufacturer	Worthington	Worthington	DresserRand
ServiceDate	1956	1964	2006
Pressure(psig)	600	850	850/600
Temperature(°F)	620	902	902/620
Flow(lbs/hr)	90,000	130,000	130,000/90,000
Speed(rpm)	3600	3600	6000
Type	Condenser	Condenser	BackPressure
<b>Generator</b>			
Manufacturer	ElectricMachinery	Electric Machinery	GEVISA
KVA	9375	16094	8235
Voltage	4160	13800	13800
Ampere	1300	673	345
PowerFactor	0.8	0.85	0.85
KW	7500	13680	6999
Speed	3600	3600	1800

### **Current Plant Environmental Permits**

The River Street Plant has the following permits in place, including a description of the expiration date of the permits:

1. Wisconsin State Department of Natural Resources - Air Pollution operational control permit - Expires December 27, 2017
  - a. Permit tied into Consent Decree and Judgment Case No 09-C-122
  - b. Emission Limits:
    - i. 0.30 lb/mmBtu of particulate emissions.
    - ii. Coal or those fuel sources provided for in the permit are the only fuel that can be used at the facility
    - iii. Opacity - 20% or number 1 on the Ringlemann Chart except during startup and shutdown.
    - iv. If coal usage if greater than 25,000 tons/year - continuous opacity monitoring is required.
    - v. Maximum of 2.35 lb/mmBtu of SO2.
    - vi. Fugitive dust emissions - not allowing any dust to become airborne.
    - vii. 20% opacity limit.

viii. No emissions of contaminants including the Wisconsin Administrative Code 445.07 Table A: [http://docs.legis.wisconsin.gov/code/admin\\_code/nr/400/445.pdf](http://docs.legis.wisconsin.gov/code/admin_code/nr/400/445.pdf)

- c. The copy of the permit is attached to the RFP.
2. Wisconsin Department of Natural Resources - Industrial Storm Water Discharge Permit Coverage dated August 15, 2011.
  3. Wisconsin Department of Natural Resources - Interim for Water Withdrawal from the Great Lakes Basin – dated July 30, 2010.
  4. Wisconsin Department of Natural Resources - Permit to Discharge – Expiration September 30, 2014.
  5. City of Menasha - Significant Sewer Discharge Permit,

Copies of the permits (2-5) are available upon request.

### **Boiler Water Pretreatment System**

With the conversion from a total condensing generation facility to a CHP plant, there was a need to supply the make-up water to the condensate system from a normal operation of 20-30 percent and up to 100 percent for abnormal operations. A General Electric Water & Process Technologies (GE) water pretreatment system was installed, to supply up to 100 percent of water requirements for Boilers 3 and 4. **The water treatment equipment was leased from GE, and the lease was terminated in 2009. The equipment is still in place; however, it is not the property of the City of Menasha.** Discussions with GE have indicated that any future owner of the plant could work with GE to determine a lease or ownership arrangement.

The system main pieces of equipment are: three parallel MultiMedia Filters, two parallel Reverse Osmosis Machines, three Mixed Bed Deionizer, two finished water storage tanks, and an Allen-Bradley SLC505 control system. The individual major pieces of equipment of the system are shown in Appendix 1.

## **Transaction Approach**

### **Notice of Intent to Bid**

The Request for Proposal (RFP) process is designed to first determine if there is interest in continuing operation of the facilities, or if there is only interest in purchasing plant for salvage or resale of components. There will be a period of due diligence and information gathering for all parties expressing interest, and then a period when Menasha will determine the preferred party to move ahead with in contract negotiations.

### **Options of Providing Notice of Intent to Bid**

Parties must indicate interest in either one or both of the following options:

1. Intent to continue plant operations - Include discussion of what is envisioned of desiring to provide electric generation only, or as a unit in providing steam to the industrial customers. Also provide indication if there is interest in converting the plant to another fuel including biomass.
2. Intent to purchase plant equipment building / land- Equipment will either be purchased for reuse or for salvage value. Interest and capabilities of being able to provide environmental cleanup for known issues should also be stated if this is likely to be included in the proposal.

The Notice of Intent to Bid is not binding and is intended to provide an indication of the type of interest in the facility and also to describe the plan on how the transaction can be pursued.

See attached Response Package in order to fill out Sections I-III for the Notice of Intent to Bid and the remaining sections for the full Proposal.

## Schedule

<b>Activity</b>	<b>Date</b>
Issue RFP	August 26, 2013
Data Gathering / Initial Due Diligence	August 26-September 20, 2013
Tours of Plant Scheduled	September 9-20, 2013
Parties Provide Written Questions	September 9, 2013
Menasha to Publish Response to Written Questions	September 13, 2013
<b>Notice of Intent to Bid</b>	<b>September 20, 2013</b>
<b>RFP Response Package Due (5 PM Central Time)</b>	<b>November 8, 2013</b>
Short-list Proposals	December 31, 2013

## Criteria for Reviewing Proposals

1. Clarity of the proposed plan to either operate or purchase plant equipment.
2. Experience of the firm in completing the type of plan that is being proposed.
3. Pricing and pricing approach.

## Proposal Responses and Inquiries

Please direct any questions and send proposals to the Menasha Official Contact below.

### Official Contact:

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## Appendix 1

- One (1)-MultiMediaFilterSystem
  - Three(3)-MultiMediaFilters
  - Each72" diax60"SSH,100psigASMECodeStamped
  - Each42FT<sup>3</sup> Anthracite,14FT<sup>3</sup> Gamet,28FT<sup>3</sup> Sand,28FT<sup>3</sup> ,SandSubfill
  - EachNormalServiceFlowRate111GPMand220GPMPeak
  - EachNormalFluxRate7.8GPM/FT<sup>3</sup> ,and3.9GPM/FT<sup>1</sup> Peak
- One (1)-CoagulantFeederSystem
  - Two(2)-Pumps(2x100%)
  - Each4GPDat100psig
- One(1)-AcidFeederSystem
  - Two(2)-Pumps(2x100%)
  - Each6GPDat100psig
- One (1)-AntiscalantFeederSystem
  - Two(2)-Pumps(2x100%)
  - Each5GPDat100psig
- One(1)- SodiumBisulfiteFeederSystem
  - Two(2)-Pumps(2x100%)
  - Each10 GPDat100psig
- One (1)-ReverseOsmosisSystem
  - Two(2)-GEOSMOPro-300ReverseOsmosisMachines
  - Each6-4-2Array,304LSSHousings,72Membranes
  - Each75HP,3600RPM,460/3/60TEFCFeedPumpMotor
  - Each333GPMat693FTTDHFeedPump
  - Each300GMPennateFlow&100GPMConcentrateFlow,at70-80% Recovery.
- One(1)-MixedBedDeionizerSystem
  - Three(3)-MixedBeds
  - Each48" diax90"SSH,150 psigASMECodeStamp
  - Each20FT<sup>3</sup> CationResign,30FT<sup>3</sup> AnionResign
  - EachServiceFlowRate250GPM
  - EachFluxRate20.7GPM/FT<sup>2</sup>
  - EachFlowRate/ResignRateof4.9GPM/FT<sup>3</sup>

- One(1)-TreatedWaterStorage
  - Two(2)-StorageTanks
  - Each144"diax424"SSH
  - Each30,000GallonCapacity
  - EachFRPCConstruction,I"FiberglassInsulation,AluminumCladding
  - EachTankHeater
  
- One(1)-TreatedWaterForwardingSystem
  - Two(2)-ForwardingPumps
  - Each300GPMat200FTTDH
  - Each30HP,3600GPM,460/3/60TEFCMotor
  
- One(1)-AmineCycleCondensatePolisherSystem
  - Two(2)-AminePolishers
  - Each42"diax72"SSH,100psig ASMECodeStamped
  - Each28FT<sup>3</sup>Resin
  - EachServiceFlowRatexxGPM
  - EachFluxRatexxGPM/FT<sup>2</sup>
  - EachFlowRate/ResignRateofxxGPM/FT<sup>3</sup>
  
- One (1)- SulfuricAcidStorage System
  - 66"diax132"Height
  - 2,000galloncapacity
  - CarbonSteelConstruction
  
- One (1)- SulfuricAcidMeteringSystem
  - Two(2)-MeteringPumps
  - Each24GPHat100psig
  - Each0.5HP,1750RPM,460/3/60TEFCMotor