



DANE COUNTY DEPARTMENT OF PUBLIC WORKS,
HIGHWAY AND TRANSPORTATION

PUBLIC WORKS SOLID WASTE DIVISION
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713

**REQUEST FOR PROPOSALS NO. 311024
SUPPLEMENTAL NATURAL GAS BLENDING FOR GENERATORS
DANE COUNTY SANITARY LANDFILL SITE #1
6718 EAST VERONA AVENUE
VERONA, WISCONSIN**

Opening Date / Time: **FRIDAY, AUGUST 12, 2011/ 2:00 P.M.**

Location: **PUBLIC WORKS OFFICE**

Performance / Payment Bond: **100% OF CONSTRUCTION CONTRACT AMOUNT**

FOR INFORMATION ON THIS REQUEST FOR PROPOSALS, PLEASE CONTACT:

JOHN WELCH, PROJECT MANAGER
TELEPHONE NO.: 608/516-4154
FAX NO.: 608/267-1533
E-MAIL: WELCH@COUNTYOFDANE.COM

DOCUMENT INDEX FOR RFP NO. 311024

PROPOSAL REQUIREMENTS

- RFP Cover Page
- RFP Cover Letter
- Documents Index
- Invitation to Propose (Legal Notice)
- Signature Page
- Fair Labor Practices Certification
- Requested Services and Business Information
- Natural Gas Blending System Specifications

LEGAL NOTICE – AMENDED

NOTE THAT THE DUE DATE HAS BEEN CHANGED TO AUGUST 12, 2011

INVITATION TO PROPOSE

Dane County Public Works, Highway & Transportation Dept., 1919 Alliant Energy Center Way, Madison, WI 53713, will receive sealed Proposals until:

2:00 P.M., FRIDAY, AUGUST 12, 2011

REQUEST FOR PROPOSALS NO. 311024

SUPPLEMENTAL NATURAL GAS BLENDING FOR GENERATORS

**DANE COUNTY SANITARY LANDFILL SITE #1
6718 EAST VERONA AVENUE
VERONA, WISCONSIN 53593**

Provide design, fabrication, delivery, installation, and start-up for supplemental natural gas blending system for generators currently running on landfill gas.

A Request for Proposal package may be obtained at Dane County Public Works, Highway & Transportation Dept., 1919 Alliant Energy Center Way, Madison, WI 53713, by calling 608-266-4018, or downloading it from www.danepurchasing.com/rfps.aspx. Please call John Welch at 608-267-8815 for additional information.

A mandatory prebid conference is scheduled for Friday, July 29, 2011 at 1:00 P.M. at Dane County Sanitary Landfill Site #1. Proposers are required to attend this mandatory conference in order to propose on the Work.

All Proposers must be a registered vendor with Dane County and pay an annual registration fee before proposal opening date and time listed above. Complete Vendor Registration Form at www.danepurchasing.com or obtain one by calling 608-266-4131.

PUBLISH: JULY 22 & JULY 29, 2011 – WISCONSIN STATE JOURNAL

JULY 22 & JULY 29, 2011 – THE DAILY REPORTER



SIGNATURE PAGE

County of Dane
 DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
 Room 425, City-County Building
 210 Martin Luther King, Jr. Blvd.
 Madison, Wisconsin 53703
 (608) 266-4131

COMMODITY / SERVICE: SUPPLEMENTAL NATURAL GAS BLENDING FOR GENERATORS											
REQUEST FOR PROPOSAL NO.: 311024	PROPOSAL OPENING DATE: August 12, 2011	BID BOND: N/A	PERFORMANCE BOND: 100 % of Construction								
<p>PROPOSAL INVALID WITHOUT SIGNATURE THE UNDERSIGNED, SUBMITTING THIS PROPOSAL, HEREBY AGREES WITH ALL TERMS, CONDITIONS AND REQUIREMENTS OF THE ABOVE REFERENCED REQUEST FOR PROPOSAL, AND DECLARES THAT THE ATTACHED PROPOSAL AND PRICING ARE IN CONFORMITY THEREWITH.</p> <table border="1"> <tr> <td>SIGNATURE OF PROPOSER REQUIRED: (Do Not Type or Print)</td> <td>DATE:</td> </tr> <tr> <td>SUBMITTED BY: (Typed Name)</td> <td>TELEPHONE: (Include Area Code)</td> </tr> <tr> <td colspan="2">COMPANY NAME:</td> </tr> <tr> <td colspan="2">ADDRESS: (Street, City, State, Zip Code)</td> </tr> </table>				SIGNATURE OF PROPOSER REQUIRED: (Do Not Type or Print)	DATE:	SUBMITTED BY: (Typed Name)	TELEPHONE: (Include Area Code)	COMPANY NAME:		ADDRESS: (Street, City, State, Zip Code)	
SIGNATURE OF PROPOSER REQUIRED: (Do Not Type or Print)	DATE:										
SUBMITTED BY: (Typed Name)	TELEPHONE: (Include Area Code)										
COMPANY NAME:											
ADDRESS: (Street, City, State, Zip Code)											

CONTRACT COMPLIANCE PROGRAM WORKSHEET

- A. Dane County has an established Contract Compliance Program that encourages targeted groups identified below to do business with Dane County, and requires Dane County to actively solicit bids from these businesses.
- B. Information from your response to this worksheet will be entered in the Purchasing Division's Advanced Procurement Systems database to provide data that will be valuable to Dane County's Contract Compliance Program as well as establishing computerized bidder lists for future solicitations. All vendors will be added to the database whether or not they qualify as a targeted business.
- C. **Contract Compliance Program:** Following are abbreviated definitions of ethnic and group codes used by Contract Compliance Program. See reverse side for full definitions:
 - 1. DBE Disadvantaged Business Enterprise
 - 2. MBE Minority Business Enterprise
 - 3. WBE Women Business Enterprise
 - 4. ESB Emerging Small Business
- D. Please select category / categories that best describe your business by marking letter for each column in box provided at bottom of column:

<input type="checkbox"/> D	DBE	<input type="checkbox"/> B	African American	<input type="checkbox"/> L	Male	<input type="checkbox"/> E	ESB
<input type="checkbox"/> M	MBE	<input type="checkbox"/> H	Hispanic American	<input type="checkbox"/> F	Female		
<input type="checkbox"/> W	WBE	<input type="checkbox"/> N	Native American / American Indian				
		<input type="checkbox"/> A	Asian Pacific American				
		<input type="checkbox"/> I	Asian-Indian American				
		↓		↓		↓	
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	

- E. I hereby certify that all of the above information given is true. If no category / categories are marked, I do not meet the requirements for any of the targeted groups.

Signature: _____ Date: _____

(over)

DANE COUNTY CONTRACT COMPLIANCE PROGRAM DEFINITIONS

- A. **Disadvantaged Business Enterprise (DBE):** A small business concern:
1. Which is at least fifty-one percent (51%) owned by one or more socially and economically disadvantaged individuals, or in the case of any publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by one or more socially and economically disadvantaged individuals; and
 2. Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.
 3. Socially and Economically Disadvantaged Individuals:
 - a) Any person having a current Section 8 (a) Certification from the Small Business Administration is considered socially and economically disadvantaged.
 - b) Individuals who are citizens of the United States (of lawfully permanent residents) are socially and economically disadvantaged:
 - 1) Women;
 - 2) Black Americans, which includes persons having origins in any of the black racial groups of Africa;
 - 3) Hispanic Americans, which includes persons of Mexican, Puerto Rican, Cuban, Central, or South American, or other Spanish or Portuguese culture or origin, regardless of race;
 - 4) Native Americans, which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
 - 5) Asian-Pacific Americans, which includes persons whose origins are from Burma, Thailand, Malaysian, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust territories of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, or the Commonwealth of the Northern Mariana Islands; and
 - 6) Asian-Indian Americans, which includes persons whose origins are from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal.
- B. **Minority Business Enterprise (MBE):** A minority person(s) owned and controlled independent and valid business concern. A minority person(s) must own fifty-one percent (51%) of the business and must control the management daily operation of the business.
- C. **Women Owned Enterprise (WBE):** A woman or women owned and controlled independent and valid business concern. A woman or women must own fifty-one percent (51%) of the business and must control the management daily operation of the business.
- D. **Emerging Small Business (ESB):**
1. An independent business concern that has been in business for at least one (1) year.
 2. Business is located in the State of Wisconsin.
 3. Business is comprised of less than twenty-five (25) employees.
 4. Business must not have gross sales in excess of three million over the past three (3) years.
 5. Business does not have a history of failing to complete projects.

THIS PAGE IS FOR PROPOSERS' REFERENCE AND NEED NOT BE SUBMITTED WITH PROPOSAL.

PROPOSERS SHOULD BE AWARE OF THE FOLLOWING:

DANE COUNTY VENDOR REGISTRATION PROGRAM

Any person proposing on any County contract must be registered with the Dane County Purchasing Division & pay an annual registration fee. A contract will not be awarded to an unregistered vendor. Complete a Vendor Registration Form at:
www.danepurchasing.com/registration
or obtain one by calling 608/266-4131.

EQUAL BENEFITS REQUIREMENT

By submitting a Proposal, the contractor / consultant acknowledges that a condition of this contract is to provide equal benefits as required by Dane County Code of Ordinances Chapter 25.016. Contractor / Consultant shall provide equal benefits as required by that Ordinance to all required employees during the term of the contract. For more information: www.danepurchasing.com/partner_benefit.aspx

FAIR LABOR PRACTICES CERTIFICATION

The undersigned, for and on behalf of the BIDDER, APPLICANT or PROPOSER named herein, certifies as follows:

A. That he or she is an officer or duly authorized agent of the above-referenced BIDDER, APPLICANT or PROPOSER, which has submitted a proposal, bid or application for a contract with the county of Dane.

B. That BIDDER, APPLICANT or PROPOSER has (check one):

_____ not been found by the National Labor Relations Board (“NLRB”) or the Wisconsin Employment Relations Commission (“WERC”) to have violated any statute or regulation regarding labor standards or relations in the seven years prior to the signature date of this Certification.

_____ been found by the National Labor Relations Board (“NLRB”) or the Wisconsin Employment Relations Commission (“WERC”) to have violated any statute or regulation regarding labor standards or relations in the seven years prior to the signature date of this Certification.

Officer or Authorized Agent Signature

Date

Printed or Typed Name and Title

Printed or Typed Business Name

NOTE: You can find information regarding the violations described above at: www.nlr.gov and werc.wi.gov.

For reference, Dane County Ordinance 25.11(28)(a) is as follows:

(28) BIDDER RESPONSIBILITY. (a) Any bid, application or proposal for any contract with the county, including public works contracts regulated under chapter 40, shall include a certification indicating whether the bidder has been found by the National Labor Relations Board (NLRB) or the Wisconsin Employment Relations Committee (WERC) to have violated any statute or regulation regarding labor standards or relations within the last seven years. The purchasing manager shall investigate any such finding and make a recommendation to the committee, which shall determine whether the conduct resulting in the finding affects the bidder’s responsibility to perform the contract.

If you indicated that the NLRB or WERC have found you to have such a violation, you must include copies of any relevant information regarding such violation with your proposal, bid or application.

REQUESTED SERVICES AND BUSINESS INFORMATION

A. Background Information:

The Dane County Solid Waste Division currently operates a landfill gas-to-energy facility at its Sanitary Landfill Site #1 in Verona, WI. The facility provides electricity to the Dane County Badger Prairie Health Care Center, with any excess electricity sold to the local utility. The landfill gas-to-energy facility consists of one CAT 3412NA and one CAT 3412TA engine. Approximately 185 SCFM of landfill gas with 40-56% methane currently fuels these generators. Due to decreasing gas quality and quantity at this site, the engine plant is not operating at its full potential. As part of a separate study on this issue, the County has determined that natural gas supplementation will allow the facility to continue providing electrical savings.

For this RFP, Dane County is inviting professional cost proposals for the design, fabrication, delivery, and installation of a supplemental natural gas blending system for the generators at this site. The system must be equipped to monitor the quality of the incoming landfill gas and of the delivery gas. The system should use those measurements to calculate the appropriate amount of natural gas to supplement with in order to maintain optimal generator operation. The system should include all necessary instrumentation and valves to provide a complete solution.

Successful Proposer will be required to familiarize themselves with the site, current operations, and current controls in order to properly design the gas blending system. Successful Proposer will prepare a conceptual design that includes a proposed site layout with the location of the new natural gas line and important site features that will be affected. The conceptual design will act as the basis for the preliminary site design. Prior to finalizing the preliminary design, successful Proposer will meet with Dane County to discuss options and a preliminary layout. At this meeting, successful Proposer will also include a basic overview of the controls and additional monitoring equipment needed to operate the engines with the natural gas supplement.

Proposer will review preliminary design with Dane County prior to preparing final detailed design. Upon completion of final design, Proposer will submit detailed design drawings and shop drawings to Dane County for review.

Successful Proposer will not be responsible for obtaining any necessary WDNR Air or Solid Waste Permit Modifications and other local permits.

B. The selected Proposer will be required to post a performance bond equal to the value of the equipment, installation, and startup costs.

C. One unbound original and **four** bound copies of the entire proposal should be sent to the following address:

John Welch, Project Manager
Dane County Department of Public Works, Highway & Transportation
1919 Alliant Energy Center Way
Madison, Wisconsin 53713

D. To submit your proposal, please follow these instructions:

1. After your cover page, place the signed Signature Page on top as page 1.
2. Place the signed Fair Labor Practices Certification after the Signature Page as page 2.
2. Place the rest of the Proposal information, including the Requested Services and Business Information, after Fair Labor Practices Certification.
3. Clearly label your envelope containing your proposal in the lower left-hand corner as follows:

“Proposal No. 311024
Supplemental Natural Gas Blending for Generators
2:00 PM, Friday, August 12, 2011”

4. Mail to:

John Welch, Project Manager
Dane County Department of Public Works, Highway & Transportation
1919 Alliant Energy Center Way
Madison, Wisconsin 53713

E. To ensure consideration, and for ease of review and evaluation, all proposals should be prepared in accordance with the following format.

- a. Pages are limited in size to 8 ½” x 11” except drawings shall be on 11”x17” paper.
- b. Each page and exhibit of the proposal should have the following information in the top right corner.

Dane County Solid Waste Department
Supplemental Natural Gas Blending for Generators
Project: RFP 311024
Proposer: _____
Page # of #

F. Proposers are requested to submit the following information in their proposal, in 7 distinct sections.

Section 1 – Proposer’s Qualifications

This section should include, but not be limited to, the following information:

- Primary and secondary contact information;
- Corporate/business structure, including primary and secondary businesses;
- Description of any past, current, or pending litigation concerning biogas or natural gas systems and payments;
- Separate descriptions, as appropriate, for each member if there is a consortium or partnership of two or more firms proposing, and a description of the relationship between the entities for this Proposal; and
- A list of at least five (5) biogas or natural gas system projects of similar size and complexity completed by Proposer in the last two years. For each project on this list,

include the name, address, and telephone number of the client for whom the work was done, as well as the date completed, and approximate value of the contract.

Section 2 – Executive Summary / System Summary

The Executive Summary section should provide a description of the proposed natural gas blending system, its functional capabilities, operation and maintenance considerations, and any subcontractors used to design, supply, or operate and maintain the system. Include a list of the individual equipment components, their size, and performance ratings. Include a description of the gas monitoring and analyzing portion of the system. Include estimate of costs for operation and maintenance of proposed system.

Section 3 – Exceptions to the Specifications

This section should include a description of all exceptions to the specifications for the natural gas blending system, in list format.

The specifications describe the minimum requirements for an acceptable unit. Minor variations in specification may be accepted if, in the opinion of County staff, they do not adversely affect the quality, maintenance or performance of the equipment. Any exceptions from these requirements must be identified in detail and must include a description of why the proposed item(s) meets, exceeds, or is irregular from the specification.

Any deviation from the minimum specifications stated herein must be identified in detail and must include a description of how the proposed item/s differ from the bid requirements, a description of how the deviation will affect the performance of the system, and detailed justification for such deviation. Bidder shall include photos and schematics as necessary, for complete clarification.

If no variations are listed, it will be assumed that all specifications are met.

Section 4 – System Controls

This section should include the types of controls proposed to regulate and monitor system operation, and how the controls for each piece of equipment in the system are integrated. This should include a thorough description of the control system's compatibility with the current generation facility controls, including the current SCADA system. In addition, the type of training necessary to understand the operation of the controls should be included.

Section 5 – System Cost Estimate

Bids should **not** include Federal Excise and Wisconsin Sales Taxes, as Dane County is exempt from payment of such taxes; State Statute No. 77.54(9a). Provide pricing for the following:

A. Base Cost Proposal

This section shall include information related to the cost of the following proposed natural gas blending system components. Cost shall be broken down into the following separate categories:

- Project design and management.

- Natural gas blending system equipment, including equipment design, fabrication, and delivery (f.o.b. Dane County Sanitary Landfill Site #1, 6718 East Verona Ave, Verona, WI). Dane County will unload equipment once it reaches the site.
- Installation, testing and start-up of natural gas blending system.
- All other requirements, as described in specifications.

B. Other Potential Costs Savings

List any items Proposer feels could provide Dane County with a cost savings on this system. This section may include changes that would reduce the functionality of the natural gas blending system. For each cost-saving item listed, provide pricing, a detailed description of the change and how it will affect the performance of the system, and a detailed justification for the change.

Section 6 – Schedule

In this section, include a schedule with the following items and required time (with dates) assuming a contract award date of September 22, 2011:

- Preliminary design complete;
- Final system design complete;
- Submittals complete;
- System fabrication complete;
- Equipment delivered.
- Installation and startup

If additional schedule items are necessary for the system to become operational include those items in the schedule.

Section 7 – Other Information

This section provides the opportunity to describe other aspects of the proposal that may not fit into the above categories.

Proposer may include in this section any preliminary drawings or plans of the natural gas blending system along with brochures or cut sheets of the equipment you intend to supply.

- G. The proposed unit shall be the manufacturer’s heaviest duty current production model, meeting or exceeding these specifications. All items and components must be of a standard production model and not modified for bid purposes.
- H. All equipment sold to Dane County must meet Federal, State and local government standards. The bidder must be a manufacturer or authorized dealer bidding on regularly manufactured equipment of this type. A bid will not be considered if the bidder has failed to show, without a doubt, that the bid is for regularly manufactured equipment, tried, proven and in current use.
- I. All costs of proposal development are to be borne by the proposer. Dane County will not reimburse any proposer for costs incurred in responding to this RFP or for the costs incurred during any subsequent negotiations.

- J. Dane County will provide all necessary and available site information to selected proposing company.
- K. Listed below are specific and estimated dates and times of events related to this RFP. The events with specific dates must be completed as indicated unless otherwise changed by Dane County. In the event that Dane County finds it necessary to change any of the specific dates and times in the calendar of events listed below, it will do so by issuing an addendum to this RFP. There may or may not be a formal notification issued for changes in the estimated dates and times.

<u>DATE</u>	<u>EVENT</u>
July 27, 2011	RFP issued
July 29, 2011, 1:00 PM CST	Mandatory site visit
August 2, 2011	Written inquiries due
August 5, 2011	Last Addendum (if necessary)
August 12, 2011, 2:00 PM CST	Proposals due
August 16, 2011	Submit additional information, if necessary
August 19, 2011	Contract and terms of sale negotiated
September 22, 2011	Contract approved by County Board and signed by County Executive
October 28, 2011 (estimated)	Preliminary Design Complete
November 18, 2011 (estimated)	Final Design Complete

- L. To obtain information regarding this project, submit all questions in writing by August 2, 2011 to John Welch, Project Manager, at Welch@countyofdane.com. All responses to questions will be posted on the Dane County web site, www.countyofdane.com/pwht/bid/logon.aspx, in the form of Addenda.
- M. Proposers may download an electronic copy of the RFP at the Dane County web site, www.countyofdane.com/pwht/bid/logon.aspx. Proposing company is responsible to check the website regularly for Addenda.
- N. **All Proposals must be submitted by 2:00 P.M. CST, Friday, August 12, 2011.**
- O. Dane County reserves the right to accept or reject any Proposal submitted.
- P. Proposals will be received and reviewed to determine the feasibility of the proposed natural gas blending system. Upon completing the review of proposals, Dane County may ask Proposing firms to submit more detailed information either in writing or in an interview with Dane County and their technical representatives. Those participating in an interview shall be prepared to discuss their proposed system, an approach for the design and completion of this Work, a timetable, and the basis of their fee schedule.
- Q. Dane County will assess all proposals to determine which proposals are economic and viable options. The assessment will be based primarily on costs, but it will also take into account non-price factors, such as experience, expertise, proven technology, system design, system operations and maintenance requirements, schedule, range of proposed services, support capabilities, and proposed contract terms.
- R. Selection will be based only on the proposal submitted and subsequent interviews / requested information. Therefore, the proposals must be complete. Submission of a proposal shall constitute a valid offer.

- S. Dane County reserves the right, without qualification and in its sole discretion, to reject any and/or all proposals or to waive any informality, technicality or deficiency in proposals received. Dane County reserves the right to consider proposals or alternatives outside of this solicitation. In addition, Dane County reserves the right, in its sole discretion, to modify or waive any of the criteria contained herein and/or the process described herein. Those who submit proposals agree to do so without recourse against Dane County for either rejection or failure to execute a contract for any reason.

- T. Dane County reserves the right to negotiate an Agreement once the successful firm is selected. The commencement of negotiations between any proposer and Dane County does not create or imply any commitment by Dane County to enter into an agreement with that proposer.

- U. Dane County is an Equal Opportunity Employer.

NATURAL GAS BLENDING EQUIPMENT SPECIFICATIONS

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required for a landfill Gas Blending System.
- B. The Gas Blending System shall include the following equipment/sub-systems:

Gas Blending System

Control Valves

Metering Instruments

Gas Analysis System

Sample Gas Conditioning System

Multiple Gas Detection Benches

Control System

Electrical Control Panel (Located in an Unclassified Area)

1.02 SYSTEM DESCRIPTION

This scope of work covers a system to provide supplemental natural gas to the existing gensets. The system should be equipped to monitor the quality of the incoming gas and of the delivery gas. The system should use those measurements to calculate the appropriate amount of natural gas to supplement with in order to maintain optimal genset operation. The system should include all necessary instrumentation and valves to provide a complete solution.

1.03 DESIGN REQUIREMENTS

- A. The Gas Blending System shall be designed for continuous operation in an indoor or outdoor environment and shall conform to the following requirements:

System Requirements

Number of systems required	1
Rated capacity of blended gas	300 scfm

Inlet Gas Conditions

Design inlet LFG flow	175 scfm
Inlet LFG Pressure (min)	2 psig
Inlet LFG Pressure (max)	4.5 psig
LFG Methane (max)	56 %
LFG Methane (min)	5 %
Incoming NG Pressure	>5psig

Discharge Gas Conditions

Discharge Gas Pressure (min)	2.0 psig
Discharge Gas Pressure (max)	5.0 psig
Equivalent Methane Concentration	50% minimum

1.04 SUBMITTALS

A. General

1. Submit Product Data and Shop Drawings in sufficient detail to confirm compliance with requirements of this Section. Submit Product Data and Shop Drawings in one complete submittal package. Partial submittals are unacceptable.

B. Shop Drawings

1. Installation drawings and specifically prepared technical data, including design capacities.
2. Specifically prepared wiring diagrams unless standard wiring diagrams are submitted with product data.
3. Provide written description of operation.

C. Product Data

1. Catalog cuts and product specifications for each product specified.
2. Standard wiring diagrams unless wiring diagrams are specially prepared and submitted with shop drawings.

1.05 QUALITY ASSURANCE

A. Manufacturers Qualifications

1. Firms regularly engaged in design and fabrication of landfill/digester gas systems of types and sizes required.
2. Products have been in satisfactory use in similar service for no less than 5 years with 10 operational systems and 5 customer references.

B. Factory Manufacturing/Assembly

1. As much of the fabrication as possible, but in no case less than 80%, shall be performed at the Gas Blending System supplier's facility.
2. The supplier's place of business must be capable of fabrication of equipment of the size required in these specifications.

C. Factory Testing

1. Gas blending system shall be factory witness tested on ambient air at the manufacturer's facility prior to shipment.
2. Test records shall be included in operation and maintenance manual.

1.06 REFERENCE STANDARDS

A. American National Standards Institute (ANSI)

1. ANSI B16.5 - Pipe Fittings and Flanged Fittings

- B. American Society of Mechanical Engineers (ASME)
 - 1. ASME B31.3 - Process Piping
 - 2. ASME Section VIII, Division 1 - Pressure Vessels
- C. National Electrical Manufacturer Association (NEMA)
- D. National Electric Code (NEC)
- E. National Fire Protection Association (NFPA)
 - 1. NFPA 820 - Fire Protection in Wastewater Treatment and Collection Facilities
- F. Underwriters Laboratories Inc.
 - 1. UL 508A - Industrial Control Panels
- G. American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
- H. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.07 SAFETY REQUIREMENTS

- A. Gas blending system shall be furnished with adequate protective devices in accordance with Occupational Safety and Health Act (OSHA). Moving parts which are hazardous to personnel shall be suitably guarded. Electrical shock protection shall be provided.
- B. Use of mercury in gages and thermometers is not permitted.
- C. System must comply with all applicable State of Wisconsin and local codes and regulations.

1.08 MAINTENANCE REQUIREMENTS

- A. All replaceable parts shall be manufactured to definite standards for tolerance, and finish in order that any such part may be field installed without further machining or fitting. All parts shall be permanently and legibly marked with original manufacturer's part number where practical. Parts or assemblies that require "fitting" for proper assembly shall be identified and separately listed in parts manual.

1.09 WARRANTY

- A. The Gas Blending System shall be provided with a warranty for all equipment, parts, and labor of no less than 1 year from start-up. The warranty certificate shall be made available and signed by an officer of the supplier's company.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. All pipe connections and openings shall be sealed.

- B. Provide rigging and storage instructions.
- C. Provide instructions for pieces of equipment that must be removed and/or unlocked before attempting to start unit.

2.01 MANUFACTURERS

- A. Equipment and accessories specified in this section shall be products of:
 - 1. Unison Solutions, Inc. (Basis of Design)
5451 Chavenelle Road
Dubuque, IA 52002
Tel: 563-585-0967
Fax: 563-585-0970
 - 2. Standby Systems
2410 East 38th Street
Minneapolis, MN 55406
Tel: 612-721-4473
 - 3. Or equal, as approved by Dane County Project Engineer

2.02 GENERAL

- A. All equipment shall not have been in service, except for shop tests, at any time prior to delivery.
- B. All parts of equipment shall be amply proportioned for all stresses which may occur during operation and for any additional stresses which may occur during fabrication, transportation, handling, and erection.
- C. The equipment shall be factory assembled to the maximum extent possible. Field assembly is permissible if disassembly is required for safe transport.

2.03 PRINCIPAL COMPONENTS

- A. Gas Analyzer
 - 1. CAI Series 600L panel mounted gas analyzer, or equal, as approved by Dane County Project Engineer. The gas analyzer panel shall consist of the following:
 - a. Mounted in air conditioned and heated NEMA 4 (painted CS) rated cabinet.
 - b. CH₄ 0-90% (NDIR) 2 channels
 - c. O₂ 0-25% (Electrochemical)
 - d. Outputs: 4-20 mA or 0-10 VDC, RS232 & TCP/IP with AK protocol.
 - e. Back pressure regulator.
 - f. Zero and span solenoid valves for automatic calibration.
 - g. Two inlet pressure regulators.
 - h. Two flowmeters and needle valves.
 - i. External fittings for zero, span, and sample gas connections

B. Valves

1. Inlet Electric Actuated Butterfly Valve
 - a. Butterfly valve with cast iron lug body, stainless steel disc and stem, and Viton seats.
 - b. Type 7 explosion proof actuator.
 - c. Spring return closed upon power loss.
2. Modulating Gas Enriching Valve
 - a. Valve type selected upon suitability for flow and pressure characteristics
 - b. Valve shall be flanged with stainless steel body and wetted materials. Seats to be Viton or PTFE.
 - c. Type 7 explosion proof modulating actuator
 - d. Rated for 100% duty cycle.
3. All valves 3 inches and larger shall be butterfly valves with cast iron bodies, stainless steel disc and stem, and Viton seats. Butterfly valves shall be lug style.
4. All valves 2-1/2 inches and smaller shall be ball valves.
 - a. Ball valves 1 inch and smaller shall have NPT threaded connections. Bodies and balls shall be 316 stainless steel. Packing or seats will be PTFE.
 - b. Ball valves 1-1/2 inches and larger shall have 150# flanged connections. Bodies and balls shall be 316 stainless steel. Packing or seats will be PTFE.

C. Instrumentation

1. All instrumentation provided on the skid shall be designed for methane gas service and shall be rated for use in classified locations, per applicable codes and regulations. At a minimum, the following instrumentation shall be provided:
 - a. Pressure gauges at each pressure change point.
 - b. Delivery pressure transmitter.

D. Controls

1. All controls for the gas blending system will be built into the electrical control panel for the complete gas conditioning system.
2. All controls for the gas blending system will be integrated with the existing facility controls or will need to replace the existing controls so that all controls for the facility are compatible.
3. See section 2.04 CONTROL SYSTEM for details about the electrical control panel.

E. Piping

1. All piping shall be minimum Type 304/304L schedule 10S stainless steel in IPS standard sizes.
 - a. All piping 2 inches and smaller may be threaded or 150# ANSI B16.5 flanged, but threaded piping shall be a minimum of Schedule 40.

- b. All piping 2 inches and larger shall be welded with 150# ANSI B16.5 flanged connections.
- c. Fabricated in accordance with ASME B31.3.
- d. Fasteners shall be Grade 5 zinc plated steel.

2.04 CONTROL SYSTEM

- A. The Gas Blending System shall be provided with a remotely located unclassified Type 4, UL 508A listed control panel, unless otherwise specified.
- B. The customer will provide a single 120VAC, 60 Hz, 1 phase feed to the Gas Blending System control panel. The size of the feed will be as required by the system manufacturer. Control panel to have main circuit breaker disconnect.
- C. The contractor will be responsible for wiring between the control panel and the blending system. Seal offs are to be placed in conduits when entering/exiting classified area. Remote panel shall accept customer inputs and have status contacts for Run/Warning/Fault/End Use Device Run Permissive. Contacts shall be compatible with customer's existing SCADA system.
- D. The control system shall be based on an Allen Bradley PLC. The manufacturer shall program the PLC to control all of the functions of the Gas Blending System. User interface shall be via a HMI.
- E. If necessary a panel air conditioner or heat exchanger is to be provided for required heat dissipation.

3.01 FIELD PERFORMANCE TESTING

- A. Field Quality Control: Manufacturer shall furnish an authorized field engineer to inspect, test, and adjust field assembled component and equipment installation including connections and control system programming modifications, as necessary, and to supervise field test performance. Manufacturer's representative shall issue an installation certificate to OWNER confirming that equipment has been installed in accordance with manufacturer's recommendations.
- B. Field Testing: Manufacturer shall perform following field tests and inspections and prepare test reports. Test shall include:
 - 1. Full load test of entire system, using available landfill gas, for 7 days with no shutdowns.

* * * END OF SECTION * * *