



DANECOUNTYDEPARTMENTOFPUBLICWORKS,
HIGHWAYANDTRANSPORTATION

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

**REQUEST FOR PROPOSALS NO. 312008
CNG FUELING STATION
DANE COUNTY LANDFILL
7102 HWY 12&18
MADISON, WISCONSIN**

OpeningDate / Time: **THURSDAY, MAY 3, 2012/ 2:00P.M.**

Location: **PUBLIC WORKS OFFICE**

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

FOR INFORMATION ON THIS REQUEST FOR PROPOSALS, PLEASE CONTACT:

JOHN WELCH
INTERIM SOLID WASTE MANAGER
TELEPHONE NO.: 608/267-8815
FAX NO.: 608/267-1533
E-MAIL:
WELCH@COUNTYOFDANE.COM



DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Joseph T. Parisi

1919 Alliant Energy Center Way Madison, Wisconsin 53713
Phone:(608) 266-4018 Fax:(608) 267-1533

Commissioner / Director
Gerald J. Mandli

April 17, 2012

INVITATION FOR PROPOSALS

You are invited to submit a cost proposal for the design, fabrication, delivery, and start-up of a compressed natural gas (CNG) fueling station to the Dane County Landfill in Madison, Wisconsin. Proposals for the installation of the CNG fueling station will also be accepted, but are optional. The Proposals are due on or before **2:00PM, Thursday, May 3, 2012**. No proposal bond is required for this project. However, the selected vendor will be required to post a performance bond equal to the value of the contract.

SUBMITTAL INSTRUCTIONS

Please be sure to complete one unbound original and four bound copies of the entire proposal package. 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. 312008
CNG Fueling Station
2:00PM, Thursday, May 3, 2012"
4. Mail to:
John Welch, Interim Solid Waste Manager
Dane County Department of Public Works, Highway & Transportation
1919 Alliant Energy Center Way
Madison, Wisconsin 53713

If any additional information about this Request for Proposals is needed, please call John Welch at 608/267-8815 or send email to Welch@countyofdane.com.

DOCUMENT INDEX FOR RFP NO. 312008

RFP Cover Page
RFP Cover Letter
Documents Index
Invitation to Propose (Legal Notice)
Signature Page
Fair Labor Practices Certification
Requested Services and Business Information
Compressed Natural Gas (CNG) Fueling Station Specifications

LEGAL NOTICE

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., THURSDAY, MAY 3, 2012

REQUEST FOR PROPOSALS NO. 312008

CNG FUELING STATION

DANE COUNTY SANITARY LANDFILL SITE #2

7102 U.S. HIGHWAY 12 & 18

MADISON, WISCONSIN 53718

Contractor to design, manufacture and deliver a Compressed Natural Gas (CNG) Vehicle Fueling System at 7102 Hwy. 12 & 18, Madison, WI 53718.

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.

Pre-bid meeting will be held on Wednesday, April 25, 2012 at 10:00 a.m. at the Dane County Landfill. Attendance is not mandatory but strongly encouraged.

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: APRIL 19 & 26, 2012 – WISCONSIN STATE JOURNAL

APRIL 19 & 26, 2012 – 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: Compressed Natural Gas(CNG) Fueling Station											
REQUEST FOR PROPOSAL NO.: 31200	PROPOSAL OPENING DATE: May 3, 2012	BID BOND: N/A	PERFORMANCE BOND: 100%								
<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 disadvantages 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 who 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.nlrb.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.

SPECIFICATIONS FOR CNG FUELING SYSTEM

REQUESTED SERVICES AND BUSINESS INFORMATION

- A. Dane County has eighteen (18) CNG vehicles, with plans for more CNG vehicles in the near future. At this site Dane County has a BioCNG plant that takes landfill Gas and converts it to CNG. The system you are proposing must be able to integrate with that system. It is Dane County's intention to use all BioCNG first and to mix Natural Gas as needed to insure they have enough CNG to cover their fleet. The CNG fueling station requested in this RFP must be capable of producing at least 60 GGE(gasoline gallon equivalent) of CNG per hour, must have enough storage capacity for 160 usable GGE and must be integrated with the existing BioCNG plant without changes to current fueling schedules/procedures. In addition, it must be capable of easily expanding for future CNG fleet growth. Dane County is inviting professional cost proposals for the design, fabrication, and delivery of a skid-mounted, fast-fill and slow-fill compressed natural gas (CNG) and BioCNG fueling station to the Dane County Landfill in Madison, Wisconsin.
- B. Base Proposals should include pricing for an OPW K800 Hybrid Fuel Control System capable of handling 2 diesel pumps, 2 gasoline pumps, 2 fast-fill CNG pumps and 4 slow-fill CNG pumps. New fuel tracking system must be compatible with Dane County's current Metco fuel tracking system and must use the same software. Firm must also submit an Alternate Pricing Proposal under Section 5, subsection B for CNG fueling station without the OPW fuel tracking system.
- C. Proposals for the installation of the CNG fueling station, including installation of all necessary utilities, will also be accepted, but are optional.
- D. The selected Proposer will be required to post a performance bond equal to the value of the contract.
- 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 8½"x11" 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
CNG Fueling Station Proposal
Project: RFP 312008
Proposer: _____
Page# of#

- F. Proposers are requested to submit the following information in their proposal, in 10 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 CNG fueling stations and payments;

SPECIFICATIONS FOR CNG FUELING SYSTEM

- 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 four (4) CNG fueling station 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. On this list include any CNG stations that are using biomethane to produce CNG.

Section 2–Executive Summary/System Summary

The Executive Summary section should provide a description of the proposed CNG fueling 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 estimate of costs for operation and maintenance of proposed system, as well as a maintenance schedule listing all regularly scheduled maintenance that must be performed on the equipment. Include a description and process flow diagram of how your system will integrate with the BioCNG system.

Description should include any special functions that the system is capable of, such as overnight time fill.

Include a description of natural gas service, electrical service, and all other utility requirements for the CNG fueling system.

Include pricing and submittals for a Metco fuel tracking system with enough ports to track transactions at all CNG pumps, 2 Gasoline pumps and 2 Diesel pumps. In addition, the new fuel tracking system must integrate with Dane County’s current Metco fuel tracking management system and software used elsewhere in Dane County. The current system uses Phoenix software for Advanced Management (X-XXXXXXXX) and is serviced by METCO 102 Enterprise Dr., Hillsboro, WI 54634(608-489-2198).

Include any preliminary drawings or plans of the CNG station along with brochures or cut sheets of the equipment you intend to supply as part of the CNG fueling station.

Section 3–Exceptions to the Specifications

This section should include a description of all exceptions to the specifications for the CNG fueling station 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.

SPECIFICATIONS FOR CNG FUELING SYSTEM

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 card reader and fuel tracking/management system and its compatibility with the current Metco fuel tracking management software. The way the system will operate is when the CNG fueling station is used it will send a signal to the BioCNG plant to start, then when the CNG is depleted and the compressor turns on to fill the storage tanks it will be producing the CNG. 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 Proposal

This section shall include information related to the cost of the following proposed gas compression system components.

- CNG fueling system equipment, including design, fabrication, and delivery (f.o.b. Dane County Landfill, 7102 Hwy. 12&18, Madison, WI 53718)
- Testing and start-up of CNG system
- OPW fuel tracking system
- All of the requirements, as described in specifications.

B. Alternate Proposal

An Alternate Proposal consists of a CNG system as described in the Specifications, but without the OPW fuel tracking system as described in Section 3.8 of the Specifications. Alternate Proposals that exclude the Metco fuel tracker are required to include all other components as the Base Proposal. All other components of the system are unchanged.

C. 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 CNG fueling system. Examples of such items may include, but are not limited to, a smaller dryer, a smaller compressor, a single-hose dispenser, or removal of certain components of the 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

SPECIFICATIONS FOR CNG FUELING SYSTEM

In this section, include a schedule with the following items and required time (with dates), Assuming a contract award date of June 14, 2012:

- Submittals complete (this can occur prior to final contract award date);
- System design complete (this can occur prior to final contract award date);
- System fabrication complete;
- Equipment delivered.

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

Section 7–Installation (optional)

Pricing Proposal for off-loading, inspection, on-site storage, and installation of CNG fueling station and installation of concrete slab and site utilities by the Proposer is optional. If the Proposer chooses to include this Work as part of the Proposal, this section should include a scope of services and qualifications of the Proposer or his subcontractor(s). Also include contract terms, schedule, and pricing for installing the system. If Proposer performs this work, Proposer must comply with all requirements of Dane County Ordinance Chapter 25.016, which pertains to domestic partnership benefits.

Section 8–Extended MaintenanceContract (optional)

Pricing Proposal for an extended maintenance contract by the Proposer is optional. If Proposer chooses to submit information for this section, include pricing, length of contract, terms of contract, description of certifications and experience, and any other pertinent information.

Section 9–Tax Incentives

Describe any tax incentives or other programs that Proposer is aware of that Dane County may qualify for with this project. Dane County is not a tax paying entity, so it does not qualify for many tax incentives. However, there are some programs that allow the equipment supplier to use the tax incentives. If this is the case with this project, describe whether Proposer is willing to work with Dane County to make use of these tax incentives.

Section 10–Other Information

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

- 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

SPECIFICATIONS FOR CNG FUELING SYSTEM

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.

SPECIFICATIONS FOR CNG FUELING SYSTEM

DATE	EVENT
April 17, 2012	RFP issued
April 25, 2012, 10:00 AM CST	Optional site visit
April 26, 2012	Written inquiries due
April 26, 2012	Last Addendum (if necessary)
May 3, 2012, 2:00 PM CST	Proposals due
May 10, 2012 (estimated)	Submit additional information, if necessary
May 17, 2012 (estimated)	Contract and terms of sale negotiated
June 14, 2012 (estimated)	Purchase approved by County Boards and DOE; Purchase Order issued

- L. One unbound original and **four** bound copies of the entire proposal should be sent to the following address:
John Welch, Interim Solid Waste Manager
Dane County Department of Public Works, Highway & Transportation
1919 Alliant Energy Center Way
Madison, Wisconsin 53713

- M. To obtain information regarding this project, submit all questions in writing by April 26, 2012 to John Welch, Solid Waste Manager, at welch@countyofdane.com. All responses to questions will be posted on the Dane County website, www.countyofdane.com/pwht/bid/logon.aspx, in the form of Addenda.

- N. Proposers may download an electronic copy of the RFP at the Dane County website, www.countyofdane.com/pwht/bid/logon.aspx. Proposing company is responsible to check the website regularly for Addenda.

- O. All Proposals must be submitted by 2:00P.M.CST, Thursday, May 3, 2012.**

- P. Dane County reserves the right to accept or reject any Proposal submitted.

- Q. Proposals will be received and reviewed to determine the feasibility of the proposed CNG fueling station 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.

- R. 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.

- S. 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.

- T. 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

SPECIFICATIONS FOR CNG FUELING SYSTEM

submit proposals agree to do so without recourse against Dane County for either rejection or failure to execute a contract for any reason.

- U. Dane County reserves the right to negotiate an Agreement after 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.
- V. Dane County is an Equal Opportunity Employer.

SPECIFICATIONS FOR CNG FUELING SYSTEM

SECTION 13210 CNG FUELING SYSTEM AND/OR FUEL TRACKING SYTEM

PART 1-GENERAL

1.1 BACKGROUND

- A. This specification section is intended to demonstrate to Proposer the minimum requirements for the proposed CNG fueling station and/or Fuel Tracking System. The submitted Proposal must include all information requested in the Requested Services and Business Information section of this RFP package.
- B. This project is being funded through the Wisconsin State Energy Office – CNG Infrastructure Challenge grant. Successful Proposer agrees to comply with all grant requirements, including, but not limited to providing Dane County with sufficient information to do monthly and quarterly reporting.

1.2 SUMMARY

- A. Proposer to design, manufacture, and deliver a skid-mounted, fast-fill Compressed Natural Gas (CNG) Vehicle Fueling System that will also use Biomethane and pipeline gas to produce CNG at the Dane County Landfill ,7102 Hwy. 12&18, Madison WI 53718. The CNG fueling system shall consist of, but not be limited to, the following minimum components:
 - 1. Two (2) 50hp, 75scfm electric motor-driven skid-mounted CNG Compressor complete with integrated compressor controls.
 - 2. One (1) single tower low-pressure, non-regenerative desiccant type dryer.
 - 3. One (1) dual hose fast fill dispenser.
 - 4. Two (2) dual hose slow fill dispensers
 - 5. Two (2) 3-Pack storage assembly including a priority valve panel with a total minimum capacity of 72,000 scf at 5000 psig
 - 6. Motor starter and control power transformer mounted on-skid.
 - 7. The Compressor must be configured so that the CNG station uses BioCNG as the preferred fuel and as can use Natural Gas when insufficient supply of BioCNG is available. BioCNG production rate is approximately 10 GGE per hour.
 - 8. OPW K800 Hybrid Fuel Control System
 - a. Capable of two (2) diesel pumps, two (2) gasoline, two (2) CNG fast-fill pumps and Four (4) CNG slow-fill pumps
 - b. Capable to handle future pumps and compatible with existing fuel management software

SPECIFICATIONS FOR CNG FUELING SYSTEM

- B. All equipment, instrumentation, interconnecting piping, and controls are to be furnished for the jobsite in an integrated packaged system by the Proposer. The package components shall be fabricated such that unloading and setting on a foundation at the jobsite requires minimal field interconnection of piping and wiring. Skid-mounted means the process equipment is assembled and pre-piped on one steel structure of such a size and weight that permits shipment by highway or other transport from point of fabrication to the jobsite. All freight charges shall be FOB Jobsite and included in price Proposal.

- C. The successful Proposer shall provide equipment and services in support of a CNG fueling system that Dane County can easily connect site utilities to; one that will include all drawings, plans, and specifications relating to the equipment and operation of the Compressed Natural Gas (CNG) fueling station. The successful Proposer will be responsible for all of the required fueling equipment, start-up, training, and services as specified. Additional requirements include:
 - 1. Supplier shall be available for at least 3 meetings in Dane County to support the County's construction and permitting efforts.
 - 2. Supplier shall visit the site 3times during construction to monitor progress and answer contractor questions.
 - 3. Supplier shall visit the site quarterly during the first year of operation for general inspection of the equipment and answer maintenance related questions.

1.3 CODES AND STANDARDS

- A. The CNG fueling station shall be constructed in accordance with all local, state, and federal codes. Equipment and assemblies shall comply with the latest revisions of approved codes and standards and current industry practices including the following:
 - 1. American Society of Mechanical Engineers (ASME):
 - a. ASME Section VIII, Division I-Boiler and Pressure Vessel Code-Pressure Vessels.
 - b. ASME Section V-Boiler and Pressure Vessel Code-Non destructive Examination.
 - c. ASME Section IX-Boiler and Pressure Vessel Code-Welding and Brazing Qualifications.
 - d. ASME B31.3-Process Piping.
 - 2. National Fire Protection Association (NFPA):
 - a. NFPA 52-Compressed Natural Gas (CNG)Vehicular Fuel Systems.
 - b. NFPA 70-National Electrical Code (NEC).
 - 3. Occupational Safety and Health Administration (OSHA):

SPECIFICATIONS FOR CNG FUELING SYSTEM

- a. Title 29–Code of Federal Regulations.
- 4. Department of Industrial Relations–California Code of Regulations (CCR):
 - a. CCR–Title 8, Industrial Relations.

1.4 UTILITIES

- A. Local Natural Gas:
 - 1. Specific Gravity : 0.6
 - 2. Temperature : 40-70 degrees F.
 - 3. Moisture Content : 7LB/MMSCF
 - 4. Available Gas Pressure at Meter: 60 psig
 - 5. Ambient Air Temp. : -15-100 degrees F.
- B. Electrical Service:

Electrical service for the system can be provided at 120 VAC-480 VAC, 1-phase or 3-phase, 60 hertz. Primary power will be provided by Dane County and brought into a Proposer-supplied transformer and starter panel on skid.

1.5 QUALIFICATIONS

- A. **Manufacturer:** Company specializing in manufacturing and packaging CNG products and equipment specified in this section with a minimum of five (5) years documented experience.

1.6 SITE CONDITIONS

- A. There is existing natural gas and electric service to the Dane County Landfill shop and building. Primary power for the CNG fueling system will be provided by Dane County and brought to a Proposer supplied transformer and starter panel on the equipment skid. Proposal must include a description of required natural gas service, electrical service, and all other utility requirements for the CNG fueling system.
- B. Dane County will provide an asphalt pad for the CNG fueling system skid to sit on. Proposal must include a description of the requirements, including loading requirements, for the asphalt pad.
- C. If Proposer wishes to perform installation of the system utilities, Proposer may submit pricing to perform this Work under Section 7 of the Proposal. Providing this information is entirely optional. If Proposer performs this work, Proposer must comply with all requirements of Dane County Ordinance Chapter 25.016, which pertains to domestic partnership benefits.

SPECIFICATIONS FOR CNG FUELING SYSTEM

1.7 SUBMITTALS

- A. General: Provide a minimum of 3 copies of all required submittals for distribution such that one copy can be returned with comments to the Proposer.
- B. Shop Drawings: Major assembly drawings, general arrangement drawing, site P&ID, compressor skid P&ID, compressor skid controls, single line electrical drawing, and site conduit drawing.
- C. Product Data: System Components: Submit manufacturer's catalogue information including capacity, component sizes, rough-in requirements and service sizes. When applicable, include electrical characteristics and connection requirements.
- D. County approved design must be received prior to start of fabrication.

PART 2—CONTRACTOR'S RESPONSIBILITIES

2.1 DESIGN AND PERMITTING

- A. Product Data: Within 30 calendar days after the successful Proposer has received the Notice to Proceed from Dane County, submit the following for approval:
 - 1. Prior to fabrication, five (5) sets of drawings, specifications, and documentation. Both hard copies and electronic copies (on CD ROM) shall be provided.
 - 2. Materials list of all items to be provided with system.
 - 3. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 4. Shop and Erection Drawings to be prepared and submitted prior to fabrication or delivery: Show all details of connections, attachment, erection diagrams, and accessory materials. Contract Drawings shall govern. Details not shown shall be according to other similar details on Contract Drawings. Indicate as specifically excluded, and indicate related materials not actually a part of this work. Proposer shall be responsible for accuracy of all dimensions, proper fit, and adequacy of connections.
 - 5. Manufacturer's recommended installation procedures which, when approved by the Dane County, will become the basis for accepting or rejecting actual installation procedures used on the Work of this Section.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- B. The Proposer shall supply engineering and design services required to produce a full set of construction drawings and corresponding specifications for subcontract or material procurement and installation. These drawings should be highly detailed and contain all relevant information for the various phases of site construction.

For those elements that relate to the CNG fueling station, the drawings to be provided in this package must include, but are not limited to, a full package that would be used to purchase all materials and equipment and to contract out all portions of this project to installation subcontractors.

The drawings should include, but not be limited to:

1. Title Sheet
 2. Site Equipment Arrangement Plan and Details
 3. Process and Instrumentation Diagram (PI&D) and Details
 4. Electrical Panel Schedule and Conduit and Wiring Routing Plan
 5. Site Mechanical Plan and Details
 6. Electrical Single Line Diagrams
 7. Instrumentation and Control Conduit and Wiring Plan Details
 8. Terminal Connection Diagrams
 9. Gas and Fire Detection Plan and Details (as appropriate)
- C. Review and approval from Dane County of the final facility design will be required before the permit application and construction period will be allowed to commence.
- D. Provide general assistance to Dane County as the County completes applications for all required state, county, or local permits.

PART 3-PRODUCTS

3.1 GENERAL

- A. Sufficient access shall be provided to perform major work on the equipment, including the removal of driver. All electric panels shall have the necessary clearances in front of openings as required by code. Sufficient access may be provided by removal of all or part of the enclosure.
- B. System shall be sized to provide the total specified gas flow with one compressor.
- C. All furnished equipment shall be new. No used equipment will be accepted.
- D. The skid assemblies shall comply with all applicable design codes.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- E. The skid shall have bolt holes to facilitate mounting of anchor bolts to a asphalt foundation, and provisions for lifting.
- F. Structural steel skids shall be of welded construction.

3.2 INSTRUMENTATION AND CONTROLS

- A. Pressure Gauges:
 1. All gauges shall read at least 1.2 times the system design pressure (NFPA52)
 2. Accuracy, including hysteresis, shall $\pm 0.5\%$ of full scale or better
 3. All gauges shall be weatherproof
 4. The dial shall have a minimum diameter of 2-1/2 inches
- B. General:
 1. All instrument components interfacing with natural gas shall be made of material compatible with odorized natural gas. No copper metal or alloys containing more than 70% copper shall be used in natural gas service.
 2. All gauges and frequently operated manual valves shall be located no higher than five (5) feet above grade and shall be easily operable and viewable.

3.3 PIPING/TUBING

- A. Gas piping design, fabrication, inspection, and testing shall be in accordance with ANSI B31.3.
- B. Cast iron or semi-steel shall not be used.
- C. Threaded gas pipe connections may be used on 1-inch nominal pipe size and smaller for piping systems with a maximum operating pressure no greater than 150 psig. Otherwise, such piping shall be socket-or butt-welded.
- D. Tube fittings shall be rated for at least 6000 psig working pressure. All tubing fittings used throughout the station system (compressor skids, dispensers, storage, and inter-skid connections) shall be Parker Seal Lok for tubing larger than 1/2" and Swage Lok compression fittings for tubing 1/2" or smaller.
- E. Stainless steel tubing shall be seamless and bright annealed, ASTM A-213, type 316. The maximum hardness of the stainless steel tubing shall be no more than Rockwell hardness of 80.
- F. All equipment and carbon steel piping shall be prepared and painted in accordance with manufacturer's standards.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- G. Tubing and tube fittings shall be installed neatly and in a quality, workmanlike manner. All piping or tubing shall be properly anchored, supported, and/or pitched.

3.4 NATURAL GAS COMPRESSOR SYSTEM.

- A. Acceptable Manufacturers/Packagers:
 - 1. ANGI Energy Systems
 - 2. Greenfield Compression
 - 3. Or equal
- B. The compressor shall be electric-driven and specifically designed to compress natural gas. No converted air compressor shall be used.
- C. The compressor shall be sized to handle the required capacity with the gas analysis and process conditions specified in paragraph 1.4. The suction pressures specified are at the station inlet (gas meter) and should be considered as maximum supply pressures.
- D. The compressor shall be designed for automatic starting, unloading, blow-down, idling, and shut off and shall be furnished with a suitably sized gas recovery system to feed blow-down gas back into system.
- E. The compressor shall be equipped with a suction automatic (motor or solenoid operated) isolation valve and check valve.
- F. Compressor bearings and journals shall be lubricated by a pressure lubrication system. Cylinders shall be oil lubricated and the unit shall be air-cooled. System shall be provided with low oil level or pressure alarm or shut-off.
- G. Each stage of compression shall be protected from over-pressurization with a relief valve. Mercer relief valves or equal shall be used for over pressure protection. All relief valves shall be ASME-rated and stamped. Relief valves may be connected to common ventheader terminating above the roof of the compressor enclosure and a minimum of 10 feet above grade.
- H. Compressors shall be belt drive. Belt drive assemblies shall include adjustable motor mountings and shall have suitable guards on all moving parts per OSHA requirements.
- I. Compressor, compressor control panel, and related equipment shall be mounted on a common, enclosed skid.
- J. Gas Detection: Each enclosure shall include an infrared point type methane detector. At 20percent LEL, unit shall signal a local amber alarm light and annunciate at the main PLC of the CNG Facility. At 40 percent LEL, the unit shall annunciate at the main PLC, and the PLC shall shut down the Facility per an automatic ESD activation.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- K. All materials shall be non-combustible or fire-rated.
- L. Exposed hot surfaces shall have guards or covers for personnel protection in accordance with OSHA requirements.
- M. Intercoolers and aftercoolers shall be provided for each stage of compression. The final discharge temperature shall not exceed 30°F above the ambient gas temperature.
- N. **ELECTRIC MOTORS**
 - 1. Acceptable Manufacturer:
 - a. Bald or
 - b. U.S.Motors
 - c. WEG
 - d. TECO
 - e. Or equal
 - 2. Electric motors shall be totally enclosed fan cooled (TEFC) or explosion proof as required for Class 1, Division 2, Group D per NEC, and be constant speed, induction type with a minimum service factor of 1.15.
 - 3. Motors shall be NEMA high efficiency type. Motor brake horse power and RPM shall be specified by the vendor. The vendor shall select motor/drive train to provide the minimum compressor and motor life-cycle costs.
 - 4. All motors shall be rated for 480 Volt, 3-phase, 60 hertz and rated for continuous duty.
 - 5. Motor starter shall be located on the skid in suitable enclosure. The compressor electrical system shall include magnetic contractors, overload relays, and circuit breaker, fuses, for all other skid mounted equipment including ventilation fans, lights and controls as necessary. The motor starter shall have overload protection. The electrical supply and supply disconnect shall be located offskid and supplied by Dane County.
- O. **GAS RECOVERY SYSTEM**
 - 1. The gas recovery system shall be designed to take the compressor blow-down gas and store the gas in a captive tank for re-compression upon the next startup of the compressor.
 - 2. The captive tank shall be ASME-rated and have the necessary capacity to prevent the release of gas to atmosphere or to the station suction line. The captive tank shall have full capacity relief protection and shall be located within the compressor.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- P. COMPRESSOR CONTROLS AND INSTRUMENTATION
1. Acceptable Manufacturers:
 - a. ANGI CCS/Horner NX251
 - b. Frank W. Murphy
 - c. Or equal
 2. A local control system and instrumentation panel shall be furnished for each compressor. The on-skid PLC shall offer a local display for parameter settings, error messages, etc. The PLC shall be UL listed.
 3. All controls and instrumentation shall comply with the NEC requirements for Class 1, Division 2, Group D, or be classified intrinsically safe, as dictated by code.
 4. Each compressor shall have, as a minimum, the following control devices and indicators:
 - a. Compressor Shutdown Protection
 - i. High inlet pressure
 - ii. Low inlet pressure
 - iii. High discharge pressure
 - iv. Low discharge pressure (w/ time delay)
 - v. Low oil pressure
 - vi. ESD shut down
 - vii. Drive motor failure
 - viii. Cooling fan motor failure (if equipped)
 - ix. High discharge temperature
 - b. Compressor Instruments and Controls
 - i. Suction pressure gauge
 - ii. Inter-stage pressure gauge (each stage)
 - iii. Hour meter
 - iv. Receiver pressure gauge
 - v. Unload Restart Control
 - vi. Oil pressure transducer
 - vii. Manual Start/Stop Switch
 - viii. Discharge pressure Auto Start/Stop control
 - ix. Power on light
 - x. ESD system w/ push button on front of enclosure
 - xi. Valves functions
 5. For future controls expansion, the control system shall offer the ability to remotely access the PLC, page maintenance personnel, and connect to a SCADA system.
 6. In addition, a common termination point must be provided for connection of remote emergency shutdown switches, 120 VAC remote annunciation of shutdown alarm, and other field wiring connections. Remote shutdown switches will be connected in series.

SPECIFICATIONS FOR CNG FUELING SYSTEM

Q. FILTERS

1. Acceptable Manufacture:
 - a. Finite
 - b. Nowata
 - c. Parker
 - d. Or equal
2. The compressor shall be equipped with filters in the suction, interstage, and discharge piping. The filters shall capture aerosol and solid particles. Each filter shall be equipped with differential pressure indicators.
3. Two coalescing filters shall be installed in series and located as far as possible downstream of the final stage after-cooler but before the priority panel. Discharge filters shall have a design pressure no less than 5000 psig.
4. All filter and vessels shall be equipped with an automatic or manual blow-down valve and a drain line or hose routed the edge of the skid.

R. ENCLOSURE

A totally enclosed, weatherproof enclosure shall be provided for the compressor assemblies in accordance with the following requirements.

1. Materials: All materials used shall be non-combustible or fire-rated materials. The enclosure shall be of welded steel construction. The enclosure base frame shall be fabricated of minimum 8" channel/tube and roof material shall be minimum #16 gauge steel.
2. Design: The enclosure shall have lockable heavy duty steel doors to provide access to equipment for routine maintenance and inspections. The base frame shall be designed for the mounting of removable equipment assemblies. All interior floor areas, which are large enough to stand on, are to be covered with anti-skid floor plate. Anti-skid floorplates shall have a pitched roof for water runoff. A gauge panel viewing window shall be provided in the enclosure door or wall for the viewing of instruments without opening or entering the enclosure. Inlet and outlet gas piping connections, and electrical connections, shall be provided on the rear of the enclosure.
3. Sound Attenuation: Noise levels shall be kept to a maximum of 80 dBA at ten (10) feet outside any enclosure wall. Proposer shall submit test results confirming compliance prior to delivery. If sound attenuating material is needed for the walls and roof of the compressor enclosure, it shall be flame resistant per NFPA-52.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- 4. Paint: Before painting, metallic surfaces shall be cleaned and free of mill scale, burrs, and sharp edges. All painted surfaces shall be prepared in accordance with the paint manufacturers written instructions.

3.5 NATURAL GAS DRYER

- A. Provide a natural gas dryer in accordance with the following:
 - 1. Acceptable Manufacturers:
 - a. Xebec Adsorption, Inc.
 - b. PSB
 - c. Pneumatic Products
 - d. Or equal
 - 2. General: Skid mounted non-regenerative single tower gas dryer (dehydrator) suitable for use to dry pipeline quality natural gas before being processed for use as a motor fuel. System will be furnished complete and ready for use with all necessary accessories or components, whether specified or not, necessary to provide a safe, durable, maintainable and functional system.
 - 3. Dryer Design Conditions:

Design Flow Rate	150 scfm
Inlet Gas Pressure	45 psig max 18 psig min.
Inlet Gas Temperature	40-70°F
Inlet Gas Water Content	7 lbs/MMscf
Ambient Air Temperature	15- 100°F
Vessel Design Temperature	-20°Fto500°F
Outlet Gas Water Content	Per NFPA52
Outlet Gas Dew Point	Per NFPA52
Duty Cycle	6 hrs/day
Minimum Desiccant Life	1,000 hrs of operation
 - 4. Filters:
 - a. Pre-filter: A cartridge type coalescing pre-filter shall be located at the inlet to dryer. Filter element shall remove 99.99% of particles larger than 0.01 microns and aerosols larger than 0.1 microns.
 - b. After Filter: A cartridge type filter shall be located at the outlet of the dryer. Filter element shall remove 100% of the particles larger than 1.0 microns.
 - c. General:
 - i. Housing and bowl shall be of aluminum or carbon steel and fitted with a drain port for removal of collected liquids.
 - ii. Filters shall be located to allow replacement of the filter element without removal of the filter housing from the piping system.
 - iii. Furnish inlet and outlet isolation ball valves at each filter.

SPECIFICATIONS FOR CNG FUELING SYSTEM

- d. Differential Pressure Gauges: Each filter shall be furnished with locally mounted differential pressure gauge, which is connected to the filter head. Pressure range 0-6 psid.
5. Dryer:
 - a. General: Natural gas dryer shall be an insulated single tower desiccant (molecular sieve) dryer.
 - b. Desiccant tower shall be an ASME U-stamped carbon steel Pressure vessel designed for 150 psig, at 500 defF, with a 1/16" corrosion allowance.
 - c. Tower shall be furnished with a local dial type pressure gauge with back-panel blow out and an ASME Code pressure relief valve complete with a lockable isolation valve between it and the tower shell.
 - d. Tower shall be fitted with a suitable desiccant fill and drain ports And stainless steel inlet diffuser and desiccant support screens.
 - e. Desiccant: Tower shall be loaded with high capacity Type 3A molecular sieve, for minimal co-adsorption of mercaptans, CO₂, H₂S, and other components or trace elements from natural gas, with a minimum life of 5 years.
 - f. Insulation: Tower shall be wrapped with fiberglass insulation and an aluminum skin to maintain optimal adsorption temperatures and to prevent accidental physical contact with any hot surfaces during regeneration. Insulation and cladding shall be suitable for outdoor installation.
 6. Valving:
 - a. System By-Pass: Provide one system by-pass valve near the system inlet and outlet.
 - b. A series of valves to separate BioCNG with CNG .
 7. Skid and Assembly:
 - a. Manufacturer shall furnish all piping systems, and all equipment, mounted on a skid. Connections shall be sealed for shipment.
 - b. All piping shall be carbon steel, SA106 Grade B with wall thickness to meet the required design conditions. Minimum schedule 40.
 - c. Fittings 2" and under shall be threaded 3000#, class 150, ASTM 1-197. Larger fittings shall be butt weld type ASTM A 234 WPB of the same wall thickness as the adjoining pipe.
 - d. Flanges shall be forged steel, slip-on or weld neck ,raised face, ASTM-A-105, bored to match the I.D. of the pipe. Flange ratings shall be as required for the design of the piping system.
 - e. Welding: Welding and welder qualifications shall conform to the requirements of ASME Boiler and Pressure Vessel Code or API Standard 1104. Filler metals shall be selected in accordance with AWS or ASTM Standards.
 - f. Electrical: All electrical systems for all electrical equipment shall be furnished and installed on the skid. Electrical construction shall be in accordance with NFPA 52 and NFPA 70

SPECIFICATIONS FOR CNG FUELING SYSTEM

Class I, Div II, Group D. Terminal strips shall be furnished with all internal wiring complete to these terminal strips. Electrical control panel(s) shall be waterproof NEMA 4. Power required shall be 120 Volt, 1 phase, 60 Hz. Provide a separate grounding lug on the skid.

- g. Painting: Skid, equipment, piping and all other ferrous materials that are not insulated shall be primed and painted. A minimum of one primer and two finishes shall be furnished with the equipment.
- h. Instrumentation: Provide a continuous dew point monitor with selectable digital dew point indication in degrees C and F at dryer control panel. Moisture sensor shall be mounted at the dryer outlet to verify the outlet gas dew point. Provide two alarm lights; one for deteriorating dew point performance and one for regeneration required. Provide one set of dry alarm contacts for a remote signal.

3.6 STORAGE

- A. The storage assembly shall consist of six (6) ASME CNG storage vessels with a MAWP of 5500 psig. Each vessel in the assembly shall be furnished with a ¾ inch NPS stainless steel lockable ball valve on the outlet; a spring loaded, self-closing pressure relief valve; stainless steel lockable ball valve for isolation of the safety relief valve. Each vessel shall be fitted with a drain port and needle style drain valve. The vessels shall be sloped toward the drain end. The storage vessels shall have a minimum capacity of 72,000 scf at 5000 psig. Storage assembly must be able to supply system with at least 160 usable gasoline gallon equivalents of CNG uninterrupted.

3.7 PRIORITY VALVE PANEL

- A. Acceptable Manufacturers:
 - 1. ANGI Energy Systems
 - 2. Greenfield Compression
 - 3. Or equal
- B. Priority control logic shall be such that in the event of a demand for fuel, three-bank cascade storage shall be accessed initially. If storage cannot complete the fill, then the station control system shall start the CNG compressor(s) and send gas directly to the dispenser(s). The compressor(s) shall continue to operate to meet any additional fastfill demands. If there are no further fastfill demands, the compressor(s) shall replenish storage. The priority control logic for flow from the compressor(s) is summarized as follows:
 - 1. First priority: direct flow to fast-fill dispenser(s).
 - 2. Second priority: replenish three-bank cascade storage; high bank first, medium bank second, and low bank third.

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3.8 CNG DISPENSER

- A. Acceptable Manufacturers:
 - 1. ANGI Energy Systems
 - 2. Greenfield Compression
 - 3. Or equal
- B. Provide one "three-line" fastfill and two slow fill dispensers. Fastfill and two slow fill pumps shall have two twin-hose dispensers to fill vehicles up to 3,600 psig referenced to 70 deg F. Dispenser shall be controlled by the fuel management system. The fuel management system shall authorize the dispenser to dispense CNG from the hose.
- C. Dispenser shall be rated for a maximum flow of 1,900 scfm (nozzle rating) and a maximum pressure of at least 5,000 psig. Dispenser shall be complete with all equipment piped and wired. A steel pit frame shall be provided for dispenser mounting and to accommodate the dispenser supply lines.
- D. Dispenser shall be certified for Weights and Measures.
- E. The sequential fill control valves shall be located in the dispenser enclosure. The flow of gas to the vehicle shall continue until the electronic control system signals a complete fill or is manually stopped. The shut-off fill pressure shall be temperature compensated at a fixed reference temperature of 70 deg F. The fueling system shall allow unrestricted fuel flow until the shut off pressure is reached (i.e., fuel flow shall not be throttled as the shut-off pressure is approached).
- F. The dispenser enclosure shall be self-supporting and weatherproof. Instructions for dispenser operation shall be displayed on the enclosure.
- G. Fuel metering shall be accomplished with a coriolis mass flow meter, Micro Motion CNG 050 or equal.
- H. The two twin-hose assemblies shall be Synflex brand or equal, and shall be electrically conductive. Each twin-hose assembly shall consist of a supply hose rated at 5,000 psig and a vent hose. Hoses shall be distinctly marked, either by the manufacturer's permanently attached tag or by distinct markings, indicating the manufacturer's name or trademark, natural gas service, and working pressure.
- I. Each dispenser shall have two nozzles; the nozzles shall be a 3,600 psig NGV 1Type II coupling, Staubli brand or equal. In line breakaway protection shall be provided for each hose assembly.
- J. For each dispenser, an inline gas filter and isolation valve shall be connected to each of the three dispenser inlet lines. The filter shall have a design pressure of 5,000 psig. Filter element replacement shall be performed without removal of the connection piping.

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- K. A new OPW K800 Hybrid Fuel System card reader/fuel management system shall be installed in order to authorize fueling transactions and provide accurate accounting of all fuel being dispensed. The system shall be able to track fuel usage for each vehicle and/or swipe card and record data for each transaction in non-volatile memory. The FMS for this project shall utilize magnetic card swipe cards. The card reader shall be a stand-alone unit located on the fastfill CNG dispenser island in order to provide convenient access to the CNG dispenser for personnel responsible for fueling vehicles. The area must meet code requirements for the electrical classification of the card reader device. The Metco K800 Hybrid should be upgraded to handle two diesel pumps, two gasoline pumps, two CNG fast-fill pumps and four CNG slow-fill pumps.

PART 4-EXECUTION

4.1 EQUIPMENT INSTALLATION

- A. Work By Others
 - 1. Off-loading, inspection, on-site storage, installation, and start-up of CNG fueling system.
 - 2. Providing power from power source to power connections on Proposer-supplied, skid-mounted equipment and control panels.
- B. Proposals for providing this Work will also be accepted in Section 7 of the Proposal, but are optional.

4.2 TESTING, STARTUP, AND TRAINING

- A. Prior to shipment, the CNG compressor shall be operated for a minimum of four (4) continuous hours and functionally tested. The test shall include, but not be limited to, operation of each compressor, all control, safety shut down and alarming systems, etc. The compressor should be tested using design operating suction and discharge pressures. Owner may decide to witness testing of the equipment and shall require two weeks' notice prior to test.
- B. A minimum of 5 consecutive days, including all travel and subsistence, shall be provided for testing and start-up by the supplier. The installed fueling station shall undergo a witnessed system test. During the testing of the mechanical, instrumentation and electrical equipment, the Supplier shall make available representatives of the manufacturers of all the various pieces of equipment or other qualified persons who shall instruct the Owner's personnel in the operation and maintenance thereof. Natural gas shall be used for the system test. The tests shall include, but not to be limited to, the items listed below.

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1. Run-test fueling station for proper operation. This includes calibrating all instrumentation.
 2. Test the ESD system.
 3. Test compressor control panels and shutdowns.
 4. Test dryer system.
 5. Test dispensing systems.
 6. Any discrepancies in the equipment found as result of these inspections and test shall be corrected by the Supplier at no additional charge.
- C. Acceptance by the Owner's Representative of the fueling station and associated items furnished by Supplier under this specification shall occur only after the following requirements have been met:
1. It has been demonstrated to the satisfaction of the Owner Representative that the fueling station as a whole, meets and conforms to the requirements of the Specification and drawings.
 2. All testing required by this Specification have been successfully completed and have been accepted by the Owner's Representative.
 3. The date of acceptance of the fueling station shall be the date of the written notice of its acceptance by the Owner's Representative to Supplier. All warranties and/or guarantees referred to or implied in this Specification shall commence on that acceptance date.
 4. Acceptance by the Owner's Representative of the respective witnessed tests shall not release Supplier from any of its warranty obligations, or any other obligation, under this Specification, the Contract, the law, or inequity.
- D. Supplier shall offer a formal week-long training class in station operation, service, and maintenance at the factory at no additional cost to Owner. The Supplier shall instruct the Owner's designated operation and maintenance personnel in the correct and safe operation, adjustment, and maintenance of all equipment and systems. The basis of instruction shall be the station operation and maintenance manual.

4.3 EQUIPMENT RECORD DRAWINGS

- A. The Supplier shall update the approved shop drawings to reflect any field modifications subsequent to delivery from the factory. The "as-built" shop drawings shall be incorporated into the station operating and maintenance manuals.

SPECIFICATIONS FOR CNG FUELING SYSTEM

4.4 OPERATION AND MAINTENANCE MANUALS

- A. All product data and related information appropriate to Owner's maintenance and operation of all products and systems provided under the Contract shall be compiled into an integrated operation and maintenance manual. Owner shall be given three (3) copies of this manual.

4.5 WARRANTY SERVICE

- A. Supplier shall provide a one-year warranty on all furnished equipment covering all non-consumable parts and labor.
- B. Warranty period shall start upon start-up and written acceptance of the system as defined above or six (6) months after shipment date, whichever comes first.

