



DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Kathleen M. Falk

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

Commissioner / Director
Gerald J. Mandli

November 16, 2005

ATTENTION ALL REQUEST FOR BID (RFB) HOLDERS

RFB NO. 105132 - ADDENDUM NO. 1

NEW DEICER FLUID STORAGE TANK

BIDS DUE: TUESDAY, NOVEMBER 22, 2005, 2:00 PM. DUE DATE AND TIME ARE NOT CHANGED BY THIS ADDENDUM.

This Addendum is issued to modify, explain or clarify the original Request for Bid (RFB) and is hereby made a part of the RFB. Please attach this Addendum to the RFB.

PLEASE MAKE THE FOLLOWING CHANGES:

1. Invitation to Bid (Legal Notice)

Change: "OCTOBER 27 & NOVEMBER 3, 2005 - WESTERN BUILDER"
To: "NOVEMBER 3 & NOVEMBER 10, 2005 - WESTERN BUILDER"

2. Section 01000

Page 1 - Item 1.2.A.2.: Delete the current paragraph & insert the following:

"Interconnect new and existing fill and dispense piping so that either tank may be filled from one location and that fluid from either tank may be dispensed from another location. System redundancy shall allow either existing or new pump to dispense fluid from either tank. Test and troubleshoot operation and performance of all systems."

3. Section 01508

Entire Section footer: Change: "Bid No. 105070", to: "Bid No. 105132".

4. Section 13201

Delete current Section 13201; replace with new Section 13201, issued with this Addendum.

If any additional information about this Addendum is needed, please call Scott Carlson at 608/266-4179.

Sincerely,
Scott Carlson
Project Engineer

Enclosures:
Section 13201

H:\PW Shared Drive\Engineering Division\Scott Carlson\105132 - Airport Deicer Tank\105132 - Addendum 1.DOC

Addendum No. 1
RFB No. 105132

SECTION 13201

ABOVEGROUND STORAGE TANKS

PART 1 GENERAL

1.1 SUMMARY

- A. Scope of Work Includes:
 - 1. Notification of authorities; and site preparation.
 - 2. All materials, labor, equipment, and supervision necessary to install minimum 20,000 gallon double-walled aboveground storage tank (AST) with appropriate openings and appurtenances to meet needs of system required in these Specifications and Drawings.
 - 3. Finished product of the Work shall comply with all applicable administrative regulatory codes.

- B. Related Sections:
 - 1. Section 01000 - Basic Requirements.
 - 2. Section 01508 - Recycling.

1.2 REFERENCES

- A. Wisconsin Administrative Code:
 - 1. Comm 10 – Flammable & Combustible Liquids.

1.3 SYSTEM DESCRIPTION

- A. New Aboveground Storage Tank (AST): Minimum 20,000 gallon potassium acetate liquid runway deicer fluid storage located outside and adjacent to existing AST, southwest of Equipment Storage & Maintenance Building and north of Sand Storage Building. AST to provide deicer fluid for Airport maintenance tanker trucks. Cryotech Deicing Technology manufactures potassium acetate liquid runway deicer fluid under “E-36” product name (800-346-7237, www.cryotech.com).

1.4 SUBMITTALS

- A. Section 01000 - Basic Requirements: Submittal Procedures.

- B. Shop Drawings: Submit manufacturer's pre-production shop drawings showing details of construction and materials for AST systems (all Products in Part 2) to Public Works Project Engineer for approval prior to ordering equipment or start of installation.

- C. Certificates: Submit certificates for AST installation and site personnel issued by State of Wisconsin Department of Commerce (DOC).

1.5 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of AST, all piping and dispenser connections, electrical power and instrumentation routing, and other points of connection made as part of this project and for future connections on original drawings prepared by installing Contractor / subcontractor. Include copies of Record Drawings with Operations and Maintenance Manual.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with following:
 - 1. United States Environmental Protection Agency.
 - 2. State of Wisconsin DOC and Department of Natural Resources (DNR).
 - 3. Public utility company requirements.
- B. Obtain and pay for necessary permits and certificates required and give proper notices for and during performance of the Work.

1.7 PROTECTION OF EXISTING WORK AND FACILITIES

- A. Verify locations of, and protect, any signs, paved surfaces, buildings, structures, sidewalks, landscaping, streetlights, hydrants, data transmission, utilities, and all other such facilities and improvements that may be encountered or interfered with during progress of the Work, both inside and outside construction limits.
- B. Notify affected utility companies before starting the Work and comply with their requirements. Have Digger's Hotline to mark location of utilities in the Work area.
- C. Take all measures necessary to safeguard all existing work and facilities that are outside limits of the Work or items that are within construction limits but are intended to remain.
- D. Provide and maintain adequate catch platforms, warning lights, barricades, guards, weather protection, dust protection, fences, planking, bracing, shoring, piling, signs, and other items required for proper protection of work.
- E. Provide protection for workmen, public, adjacent construction, and occupants of existing building(s).
- F. Burning of debris on property not permitted.
- G. Provide adequate fire protection.
- H. Explosives shall not be used.
- I. Provide protection for adjacent private property.
- J. Proper erosion control practices shall be employed to minimize surface runoff to adjacent properties, nearby streams, or other surface waters. Keep streets, walks and all other

adjacent paved areas clean and swept clear of dirt, mud and debris that are deposited as result of this Work.

- K. Be responsible for any public sidewalk, curb, gutter or street paving damaged by any operation under this Contract, and be responsible for repair of all damage in compliance with local municipality rules and regulations at no additional expense to County.
- L. Make repairs or provide new replacement of all damage that is not part of the Work on project site or to adjacent property to Public Works Project Engineer's satisfaction.

1.8 NOTIFICATION / PERMITS

- A. Notify in writing local Wisconsin DOC authorized agent, and Public Works Project Engineer of installation schedule at least 15 days prior to beginning tank installation work. Obtain permits and comply with local ordinances governing aboveground tank installations.

1.9 QUALIFICATIONS

- A. Tank Installation Company: Company specializing in performing work of this section with minimum 5 years experience and certified by Wisconsin DOC.
- B. Installation, Testing, and Inspection Site Personnel: Individuals specializing in performing work of this section with minimum 5 years experience and certified by Wisconsin DOC.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Section 01000 - Basic Requirements: Quality Assurance / Quality Control of Installation; Transportation, Handling, Storage and Protection.
- B. Federal, state and local code requirements shall control handling, storage, transportation, and disposal of solid wastes, contaminated soils, scrap materials, hazardous or non-hazardous wastes, and other construction / demolition materials.

1.11 COORDINATION

- A. Section 01000 - Basic Requirements: Coordination.
- B. Coordinate Work with Public Works Project Engineer for tank installation.
- C. Notify Digger's Hotline of work plan and obtain necessary clearances to proceed.
- D. Tank installations must be properly documented. Documentation shall conform to minimum requirements listed in Wisconsin DOC Comm 10.

PART 2 PRODUCTS

2.1 GENERAL

- A. Conform all materials to size and type shown on drawings or as called for in specifications and to applicable Laws, Codes, and Ordinances.
- B. All products and materials are to be new, undamaged, clean, and in good condition. Existing products and materials are not to be reused unless specifically indicated.
- C. Be responsible for safe storage and handling of all materials utilized in the Work including any materials furnished by Owner. Store all materials in areas designated by Public Works Project Engineer. Store and / or handle materials to not adversely affect traffic, drainage, fire protection, or public safety. Inconveniences to public from storage and handling of materials shall be kept to minimum.
- D. Perform all work in accordance with any applicable manufacturer's instructions.

2.2 ABOVEGROUND TANKS - STEEL DOUBLE WALL TANKS

- A. AST system shall include:
 - 1. 3-inch flanged inlet
 - 2. 3-inch flanged outlet
 - 3. 3-inch standard vent with weatherproof vent cap;
 - 4. 8-inch emergency vent with weatherproof vent cover;
 - 5. 24-inch minimum top manway;
 - 6. ¾-inch top and bottom threaded outlets to mate with selected level gauge;
 - 7. 1-inch drain outlet; and
 - 8. OSHA approved, connected ladder, stairway, or rungs to gain access to top of tank (configuration to match existing AST).
- B. AST shall be made of double-walled steel for use with potassium acetate liquid runway deicer fluid product.
- C. AST shall be built in accordance with recognized standards of design. AST shall bear label identifying fluid and non-hazardous nature.
- D. Interior of tank to be coated with two-part epoxy finish.
- E. Exterior of AST to be primed and painted to match existing deicer storage tank, using 2 coats of Sherwin-Williams SW4006 Lodestone industrial enamel finish.
- F. AST shall be labeled:
 - 1. In accordance with DOC Comm 10;
 - 2. With "Right-To-Know" identification (fire hazard; instability; specific hazard; health hazard); and
 - 3. With Seton M0759 UltraTuff, or equal.
 - a. 14" (H) x 10" (W) (min.).
 - b. Printed with approximately 12" (min.) high character "2".

- c. "Navy blue" field; white character / text.
- d. Locate near center of tank's east face.

G. Existing AST shall be labeled:

1. With Seton M0759 UltraTuff, or equal.
 - a. 14" (H) x 10" (W) (min.).
 - b. Printed with approximately 12" (min.) high character "1".
 - c. "Fire engine red" field; white character / text.
 - d. Locate near center of tank's east face.

2.3 FOUNDATION SLABS

A. AST shall be installed on concrete slab cast in place by Contractor, and appropriately sized for dimensions of AST. Refer to Figure 3 and existing conditions. Concrete shall contain polyfibers as bonding agent; 3 pounds polyfibers per cubic yard of concrete. Foundation slab shall be cast on prepared 8 inch base of clean ¾" washed aggregate with compaction of 95% in location shown on drawings and confirmed with Facilities Manager. Slab shall be cast in manner to ensure AST is level when placed in its final position.

1. Slab shall be 12 inches thick with #4 reinforcing bars spaced 12 inches each way;
2. Slump shall not exceed 4 inches;
3. Strength shall be not less than 3500 psi in 28 days;
4. Keep concrete moist for 5 days of curing;
5. Pad shall be sized to allow 5' of open pad area in front of (east) AST, to allow for installation of steps, ladder and platform assembly; and
6. Compact and fine grade to adjacent grading around pad and over electrical lines to building.

B. Pump / motor assembly shall be installed on concrete slab cast in place by Contractor, sized 4' by 4'. Refer to Figure 3. Concrete shall contain polyfibers as bonding agent; 3 pounds polyfibers per cubic yard of concrete. Foundation slab shall be cast on prepared 5 inch base of clean ¾" washed aggregate with compaction of 95% in location shown on drawings and confirmed with Facilities Manager. Slab shall be cast in manner to ensure pump is level when placed in its final position.

1. Slab shall be 4 inches thick with #4 reinforcing bars spaced 12 inches each way;
2. Strength shall be not less than 3500 psi in 28 days; and
3. Keep concrete moist for 5 days of curing.

2.4 PUMP / MOTOR ASSEMBLY

A. Pump / motor assembly shall include:

1. Stainless steel positive displacement pump;
2. 3" inlet and outlet;
3. Integral relief valve;
4. "Duravane" sliding vane design;
5. Low speed coupling;
6. 520 RPM gear reducer;
7. Mechanical seal - external ball bearings;

- a. Seals shall be butyl rubber, ethylene propylene rubber, isoprene or natural rubber.
- 8. 10 HP, 208V, 3-phase TEFC electric motor; and
- 9. Sized for 200gpm.
- B. Pump / motor assembly shall be mounted to steel stand, 1' above finished pad surface, bolted to new 4' by 4' concrete pad just north of existing AST. Refer to Figure 3 for locations and dimensions.
- C. Remove two (2) existing start / stop switches for pump. Replace with two (2) start / stop switches to operate both pumps.
 - 1. One (1) switch at ground level (for bottom loading); and
 - 2. One (1) switch at top of tank (for top loading).
- D. Switches shall have three (3) positions, clearly marked, from left to right:
 - 1. Pump 1 On;
 - 2. Off; and
 - 3. Pump 2 On.

2.5 PIPING, VALVES AND FITTINGS

- A. Piping, valves, and fittings shall comply with NFPA 30.
- B. All aboveground piping, valves, and fittings shall be of stainless or carbon steel and be primed and painted to match existing deicer storage tank, using 2 coats of Sherwin-Williams SW4006 Lodestone industrial enamel finish, to inhibit corrosion. Some valves have different finish coat colors, as noted in Part 3 below.
- C. Valve seals shall be butyl rubber, ethylene propylene rubber, isoprene or natural rubber.
- D. Furnish Owner with Seton M4539, or equal, stainless steel valve tags.
 - 1. Include stainless steel chain for attaching each valve tag.
 - 2. 1½" diameter (min.).
 - 3. ¼" (min.) letters, ½" (min.) numbers.
 - 4. Label as noted:

Top Line	FILL	FILL	DISP.	DISP.				
Bottom Line	1	2	1	2	1-1	1-2	2-1	2-2
- E. All pipes shall be sloped toward tank to prevent air pockets.
- F. Piping shall be 3" to match existing AST system. See Drawings for piping and valve configurations.
- G. Overhead piping shall be supported between tanks in a manner to bear its weight and outdoor conditions.
- H. Fill and dispense piping that is routed parallel to existing AST shall be mounted at same height as existing piping and shall be identically supported.

- I. Piping / tank system shall include:
 - 1. One (1) 3” Morrison 548A pressure vacuum vent cap;
 - 2. NIBCO ductile iron butterfly valves;
 - 3. NIBCO 1” stainless steel ball valves; and
 - 4. Two (2) Morrison 286 flanged top cleanout strainer.

2.6 TANK LEVEL GAUGING SYSTEM

- A. Monitoring system shall include:
 - 1. Visual tank gauge for measuring and recording product inventory; and
 - 2. Ernst Flow Industries Model EFI 23-353, or equal.
 - a. Include one (1) stainless steel center support in installation.
 - b. Glass length to be determined by maximum tank connections distance on vertical face.

2.7 OVERFILL PROTECTION

- A. Overfill protection shall be provided by following methods:
 - 1. Direct reading level gauge on tank, visible from fill pipe access.

2.8 COLLISION PROTECTION

- A. Surround AST with collision protection devices on sides that are exposed to vehicular traffic. Collision protection shall be provided through use of precast steel, concrete filled bollards. Construction and placement of bollards must be specified and detailed in Shop Drawings. Final configuration of collision protection shall be subject to plan review by authorities having jurisdiction.
- B. Precast steel, concrete filled bollards shall:
 - 1. Be 8 inch (min.) diameter, rust free steel pipe;
 - 2. Be smoothly capped with rounded concrete top;
 - 3. Extend 48 inches above finished grade;
 - 4. Be set into concrete, 48 inches (min.) below grade by 18 inches (min.) diameter;
 - 5. Shall be evenly spaced at 48 inch (max.) intervals (see Figure 3);
 - 6. Set in straight lines and identical heights relative to one another; and
 - 7. Properly primed and painted “safety yellow”.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01000 - Basic Requirements: Summary of Work; Coordination.
- B. Verify location of AST with Public Works Project Engineer.

3.2 INSTALLATION

- A. AST system including appurtenances shall be installed in strict accordance with manufacturer's recommendations and applicable fire and environmental codes. State and local permits shall be obtained prior to installation.
- B. Certified installers shall install AST and systems.

3.3 ABOVEGROUND STORAGE TANK (AST)

- A. AST shall be installed in accordance with requirements for aggregate storage capacity at site, setbacks, vehicle collision protection, labeling, and all other installation requirements not indicated in Contract Documents but specified in Wisconsin Comm 10.
- B. AST shall be installed on reinforced concrete base slab designed to support fully loaded tank.
- C. AST shall be marked on all sides with warning signs: (as appropriate for contents), product identification, and other signs as required by applicable codes. Both new and existing ASTs shall be marked on front (west) side with tank number identifying marker.

3.4 PUMP / MOTOR ASSEMBLY

- A. Existing pump / motor assembly (or Pump 1) shall be primed and painted "Packer green". New pump / motor assembly (or Pump 2) shall be primed and painted "Packer gold".
 - 1. Paint shall not interfere with pump or motor operation;
 - 2. Do not paint over or cover manufacturer data or nameplates; and
 - 3. Spray paint is not allowed.

3.5 PIPING, VALVES AND FITTINGS:

- A. Upon completion of their installation, pipelines shall be pressure tested to four times anticipated operating pressure and maintained within accepted limits for one hour.
- B. Provide relief valves, low point drains, and make sure block valves can be actuated without operator risk. Avoid dissimilar metals, or provide properly engineered insulators to minimize effect of galvanic corrosion. Potassium acetate has low viscosity and low surface tension. High quality joints are required for leak-tight system. Welded or fused pipe joints are required.
- C. Valves associated with fluid fill or dispense to or from existing AST (or Tank 1) shall be primed and painted fire engine red. Valves associated with fluid fill or dispense to or from new AST (or Tank 2) shall be primed and painted navy blue. There is 1 fill and 1 dispense valve specifically associated with each tank.
 - 1. Paint shall not interfere with valve actuation or operation; and
 - 2. Spray paint is not allowed.
- D. Valves associated with existing pump (Pump 1) operation shall be primed and painted Packer green. Valves associated with new pump (Pump 2) operation shall be primed and

painted Packer gold. There is 1 valve on the suction side and 1 valve on the discharge side for each pump.

1. Paint shall not interfere with valve actuation or operation; and
2. Spray paint is not allowed.

3.6 ELECTRICAL:

- A. Contractor shall trench, then bury all electrical wiring / conduit between new pump and electrical service entrance at back of maintenance building. Provide and wire to new circuit breaker in existing 100A panel as directed by facility staff electrician. New pump shall be on circuit fed by emergency generator.
- B. Electrical work shall be in accordance with applicable codes. Electrical system for dispenser pumps shall include an emergency shutoff switch located per code requirements. AST shall be electrically grounded in accordance with NFPA 78. AST shall also be cathodically protected.
- C. AST system installations shall be inspected and approved by system supplier or its certified contractor. System supplier shall submit comprehensive checklist of quality and safety items critical to system and verify that installation has been performed in accordance with these standards applicable fire and environmental codes.
- D. State and local permit applications shall be completed using correct forms. System installation shall not start before obtaining required State and local permits and approvals.

3.7 TESTING AND GUARANTEE

- A. Test all newly installed equipment for compliance with requirements of local, state, and federal regulations and to determine that system is operating properly.
- B. Upon completion of installation work, submit to Public Works Project Engineer submittal packet which includes as-built record drawings and copies of all state and local government required paperwork and plan reviews, as well as manufacturers descriptions and specifications for all components of system that were installed as part of Contract.
- C. Furnish copies of updated Aboveground Liquid Storage Product Tank Registration Form (ER-8731) and Checklist for Aboveground Tank Installation (ER-9658) to Wisconsin DOC, Bureau of Petroleum Products and Tanks, P.O. Box 7873, Madison, Wisconsin 53707, and to Public Works Project Engineer.

3.8 SITE RESTORATION

- A. Unless otherwise specified or noted on drawings, fully and completely restore surface of all disturbed areas to like condition of surface prior to the Work.
 1. Sawcut all concrete or asphalt pavements to straight and neat lines and repair with like materials to full depth of pavement as existed prior to the Work;
 2. Level off all waste disposal areas and clean up all areas used for storage of materials or temporary deposit of excavated earth;
 3. Remove all surplus material, tools and equipment; and

4. Topsoil, fertilize, seed, and mulch (or sod) all disturbed landscaped areas with minimum of four inches of topsoil, fertilizer, seed, and mulch (or sod), or provide for restoration of other landscaping materials as necessary.

B. Burning is not permitted.

3.9 TRAINING

- A. Original equipment manufacturer's factory representative or another sufficiently trained individual shall provide minimum of one hour training to facility personnel demonstrating functions of and maintenance procedure for entire system. Training session must also include instructions on leak detection and record keeping as required by Wisconsin DOC. Guidance must also be given as to how to respond in event of leak in system. Training and trainer shall be to level of satisfaction of Owner. Owner may choose to videotape training session; therefore, sufficient advance notification of training session is required.

END OF SECTION