County of Champaign, Illinois
1776 East Washington
Urbana, IL 61802
Ph 217.384.3720

June 6, 2024

BID: County of Champaign, Illinois
Courthouse Boiler Burner Replacement (ITB #2024-002)
July 9, 2024
2:00 P.M., Public Opening
Lyle Shields Meeting Room
Brookens Administrative Center
1776 East Washington
Urbana, Illinois 61802-4581

Dear Bidder:

The County of Champaign is inviting the submission of sealed bids for replacing the burners of both existing steam boilers at the Champaign County Courthouse, 101 East Main Street, Urbana, Illinois 61801.

Specifications are prepared with the intent of offering equal opportunity to all bidders. No oral interpretations will be given to any bidder as to the meaning of the specifications. Requests for clarification must be submitted **in writing** via mail, fax or email to:

GHR Engineers and Associates, Inc.
Attn.: James N. Gleason
1615 South Neil Street
Champaign, IL 61820
Fax: (217) 356-1092
Email: jgleason@ghrinc.com

Clarification requests must be received no later than July 2, 2024, 2:00 pm to be considered.

Pursuant to the Illinois Prevailing Wage Act (820 ILCS 130/1 et seq.), not less than the prevailing rate of wages as determined by the Illinois Department of Labor, County of Champaign, or court on review shall be paid by the vendor/contractor to all laborers, workers and mechanics performing work under this contract.

All bids are to be sealed and in the hands of the undersigned by the due date and time stated above, at which time bids will be publicly opened. There will be no bids accepted after said date and time. Your bid is to be submitted on the bid form provided. The envelope containing your bid is to be sealed and marked in the lower left-hand corner: **"Sealed Bid: Courthouse Boiler Burner Replacement (ITB #2024-002)".** Bids will not be accepted by FAX or by e-mail.

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The Champaign County Board reserves the right to reject any or all bids, to accept the bids, or to waive any irregularities should it deem to be in the best interest of the County of Champaign to do so. The bids will be awarded to the lowest responsible bidder meeting specifications as determined by the Champaign County Board.

Sincerely,

Dana Brenner
Facilities Director

END OF NOTICE TO BIDDERS 00 0200

County of Champaign, Illinois
1776 East Washington
Urbana, IL 61802
Ph 217.384.3720

DOCUMENT 00 1116 - INVITATION TO BID - ITB #2024-002

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders are invited to submit bids for Project as described in this Document.

B. Project Identification:
Courthouse Boiler Burner Replacement

1. Project Location:

Champaign County Courthouse
101 East Main Street
Urbana, Illinois 61801

C. Owner: County of Champaign

1. Owner's Representative:

Dana Brenner, Facilities Director
1776 East Washington
Urbana, IL 61802-4581
Phone: (217) 384-3765
Email: dbrenner@co-champaign.il.us

D. Project Design Team: GHR Engineers and Associates, Inc.

E. Project Description:

1. Replacing existing boiler burners with new high efficiency burners.

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed bids until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Contract Documents issued by Owner, and delivered as follows:

1. **Bid Date: July 9, 2024.**
2. **Bid Time: 2:00 p.m., local time.**

Location:
Lyle Shields Meeting Room
Brookens Administration Center
1776 East Washington
Urbana, IL 61802

B. Bids will be thereafter opened in the presence of the bidders and read aloud.

1.3 BID SECURITY

A. Bid security in the form of a bank draft/cashier's check, certified check, U.S. money order, or bid bond **payable to County of Champaign** shall be submitted with each bid in the amount of **ten (10) percent** of the bid amount. No bids may be withdrawn for a period of **sixty (60) days** after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.4 PREBID CONFERENCE / SITE VISIT

A. A prebid conference for all bidders will be held at **Lyle Shields Meeting Room, Brookens Administration Center, 1776 East Washington, Urbana, Illinois** on **Thursday, June 21, 2024 at 2:00 pm**, local time. Meet at front entrance.

B. Building access for additional site visits may be made by contacting Owner's Representative.

Chris Smith, Building and Grounds Manager
Phone: 217-384-3765
Fax: 217-384-3896
E-mail: csmith@co-champaign.il.us

1.5 DOCUMENTS

A. Documents may be viewed at: www.co.champaign.il.us/countyexecutive/bids.php

B. Documents can be procured free of charge by emailing Shannon Hicks, shicks@ghrinc.com. All documents will be in pdf form by email only.

1.6 TIME OF COMPLETION

A. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

1. Anticipated Award of Contract: Board Meeting, **July 18, 2024.**
2. Anticipated Letter of Notice of Award: On or about **July 19, 2024.**
3. Pre-Construction/Pre-Installation Meeting: TBD.
4. **Substantial Completion: October 12, 2024.**
5. Punch List: Issued on or about **October 13, 2024.**
6. **Final Completion: October 22, 2024.**

1.7 BIDDER'S QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. **A Performance Bond, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.**

1.8 BIDDER'S QUALIFICATIONS

A. Bidders shall hold directly a State of Illinois Boiler Pressure Vessel Repair License.

B. Bidders shall carry insurance in the minimum amount of $300,000 to cover losses related to their work. (A Certificate to this effect is part of the License Procurement from the State.)

C. Bidders shall have an R Certificate of Authorization from the National Board of Boiler and Pressure Vessel Inspectors.

D. Welders employed for this work shall be ASME certified.

E. Bidders shall have at least ten years documentable experience in low pressure steam boiler burner replacement and repairs.

1.9 CONDITIONS OF THE WORK

A. The boilers are used to create steam for space heating, reheat and humidification.

B. The boilers are used year-round with at least one in operation at any given time.

C. Bidders shall visit the site prior to submitting their bid. Observe the means of access to the boiler room for materials and personnel.

D. Work on one boiler at a time. Remaining boiler shall remain in full operation until the replacement burner is brought back on line. Then replace the other burner.

E. The Champaign County Courthouse is fully occupied and must remain in operation at all times.

F. Schedule material deliveries and removal with designated County Representative to avoid conflicts with ongoing operations.

G. Observe all building safety and security protocols as expressed by the designated County Representative.

1.10 SCOPE OF WORK

A. Provide all labor, equipment and material to:

1. Provide and install new burners within both existing Kewanee boilers. The boilers are Kewanee L3S-125-G Classic III 15 psig steam and are approximately 24 years old. (Kewanee is out of business.)
2. New burners shall replace the existing burners in their entirety.
3. Work shall include combustion chamber modifications, boiler modifications, new gas train components and control modifications as required for a complete and operable system.
4. Burner

    a. (2) Riello, Model: RS 130 / EV.
    b. Fuel: Natl gas at 11" wc (field verify pressure before submitting proposal).
    c. Firing rate max: 5,545 MBH.
    d. Firing rate target: 5,230 MBH (125 hp).
    e. Firing Rate min: 607 MBH (14 hp).
    f. Min Turndown ratio: 8.6 : 1.
    g. Siemens LMV – 3 Burner Management System with BACnet interface.
    h. On-board 4.3" Touch-screen.
    i. Variable Speed Drive Blower System.
    j. Step-down Transformer.
    k. RWF-55, PID Firing Rate Control.

        1) 15 psi Steam G/P Sensor.

    l. Local / Remote enable switch (for use with BAS).
    m. Alarm horn and Silence.

5. Gas Train

    a. UL ASME CSD – 1a Code Compliant.
    b. Pressure regulating, on / off gas valve.
    c. Safety shut-off gas valve.
    d. High and low gas pressure switches.
    e. Main and pilot manual shut-off valves.

6. Installation

    a. The scope of the project will include at a minimum, the following;

        1) Removal and disposal of the existing burners.
        2) New burner mounting plates complete with refractory, so as to provide proper burner location and placement, relative to the boiler, its wet surfaces and its combustion chamber.
        3) Natural gas piping as required by the gas train components and as per the manufacturers' requirements for proper installation and operation. In addition, all associated vent lines, relief lines, sensing

lines, pipe stands, etc., will be provided and installed as per all applicable codes and standards.

4) Electrical connection to the existing power supply, rewiring and reorganization of the boiler pressure controls and wiring of the gas train components, will be provided.

5) The burner, its flame management system and the gas train components will be provided and installed in compliance with the requirements of the State of Illinois, Office of the State Fire Marshal, Division of Boiler and Pressure Vessel Safety; Underwriters Laboratories UL / ASME CSD – 1a (if applicable); NFPA – 8501, 8502, 8503, 8504 (if applicable) and/or any additional state or local codes that may apply.

7. Lead times shall be six weeks maximum on receipt of order.
8. Installation time shall be seven working days maximum per boiler.
9. Contact the State Fire Marshals Office on completion of work on each boiler. If a site inspection is required the Bidder shall arrange for such inspection.
10. Bidder shall note a separate contract will be written to retube both boilers. Burner work must be scheduled in such a way as to allow retubing work to take precedent over burner replacement.
11. Bidder shall contact existing Building Automation System (BAS) operator (Alpha Control Service, 866.257.4201) and include all work by Alpha required to properly disconnect existing burners (one by one) and reconnect new burners (one by one). Alpha currently sends an enable / disable signal to the existing burners. This function shall continue with the new burners. This project will not fully integrate the new burners into the BAS.
12. Ameren Act-On-Energy Incentive

    a. Bidder shall provide all services necessary to apply for Act-On-Energy incentives associated with burner replacement.
    b. The incentives will be related to increased efficiency of combustion and increases in part load efficiency.
    c. The incentive application will be via Ameren's "Custom" process.
    d. Bidder shall do all the legwork resulting in incentives on the order of $20,000 to $24,000 for the project.

1.11 SCHEDULE

A. See "Time of Completion" above. Successful Bidder shall submit shop drawings to the Engineer July 22, 2024.

END OF DOCUMENT 00 1116

County of Champaign, Illinois
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DOCUMENT 00 4113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: **Courthouse Boiler Burner Replacement (ITB #2024-002)**

C. Project Location: 101 East Main Street
Urbana, Illinois 61801

D. Owner: County of Champaign

E. Building Design Team: GHR Engineers and Associates, Inc.

1.2 QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

B. Bidders shall hold directly a State of Illinois Boiler Pressure Vessel Repair License.

C. Bidders shall carry insurance in the minimum amount of $300,000 to cover losses related to their work. (A Certificate to this effect is part of the License Procurement from the State.)

D. Bidders shall have an R Certificate of Authorization from the National Board of Boiler and Pressure Vessel Inspectors.

E. Welders employed for this work shall be ASME certified.

F. Bidders shall have at least ten years documentable experience in low pressure steam boiler burner replacement and repairs.

1.3 CERTIFICATIONS AND BASE BID

A. HVAC Bid, Single-Prime Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by the Design Team, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named

project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. _____Dollars
($_____).

Bidders Note: Show bid amount in both words and figures. All spaces must be completed.

1.4 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within **ten (10)** days after a written Notice of Award, if offered within **sixty (60)** days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached bank draft/cashier's check, certified check, U.S. money order, or bid bond **payable to County of Champaign**, as liquidated damages for such failure, in an amount constituting **ten percent (10%)** of the Base Bid amount:

1. _____Dollars
($_____).

B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the bank draft/cashier's check, certified check, U.S. money order, or bid bond.

1.5 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Owner, and shall fully complete the Work as indicated in the Invitation to Bid.

1.6 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.
3. Addendum No. 3, dated _____.

1.7 CONTRACTOR'S LICENSE

A. The undersigned warrants that he/she is duly authorized to bind contractually the entity submitting this bid, to fully perform all duties and to deliver all services in accordance with the terms and conditions set forth herein. All signatures to be sworn before a Notary Public.

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1.8 REFERENCES

A. List six separate projects where burner replacements of at least 4,000 MBH have been provided - 2 examples of firebox boiler / burner conversions; 2 examples of scotch boiler / burner conversions and; 2 examples of water-tube type boiler / burner conversions.

1. Location_____ Type_____
2. Location_____ Type_____
3. Location_____ Type_____
4. Location_____ Type_____
5. Location_____ Type_____
6. Location_____ Type_____

B. Provide two photographs of each example.

1. Location_____ Photos Attached (Y/N)_____
2. Location_____ Photos Attached (Y/N)_____
3. Location_____ Photos Attached (Y/N)_____
4. Location_____ Photos Attached (Y/N)_____
5. Location_____ Photos Attached (Y/N)_____
6. Location_____ Photos Attached (Y/N)_____

1.9 SUBMISSION OF BID

Respectfully submitted this ____ day of _____, 2024.

Submitted By: _____
(Name of bidding firm or corporation)

Authorized Signature: _____
(Handwritten signature)

Signed By: _____
(Type or print name)

Title: _____
(Owner/Partner/President/Vice President)

Witness By: _____
(Handwritten signature)

Attest: _____
(Handwritten signature)

By: _____
(Type or print name)

Subscribed and sworn to before me this

_____Day of _____, 2024.

_____, Notary Public

(Affix Notary Seal Here)

END OF DOCUMENT 00 4113

PART 1 - DEMOLITION

1.1 DEMOLITION

A. Remove the existing burner in its entirety. This includes all burner components, the existing burner mounting plate refractory, the mounting plate (down to the boiler furnace tube) and any additional mounting plate hardware.

B. All gas handling components shall be removed including the automatic and manual valves.

C. Remove all wiring and conduits, to all burner related components including; all gas train components and boiler level and pressure controls. The conduit from the main power supply panel to the burner may remain however, the wiring shall be removed.

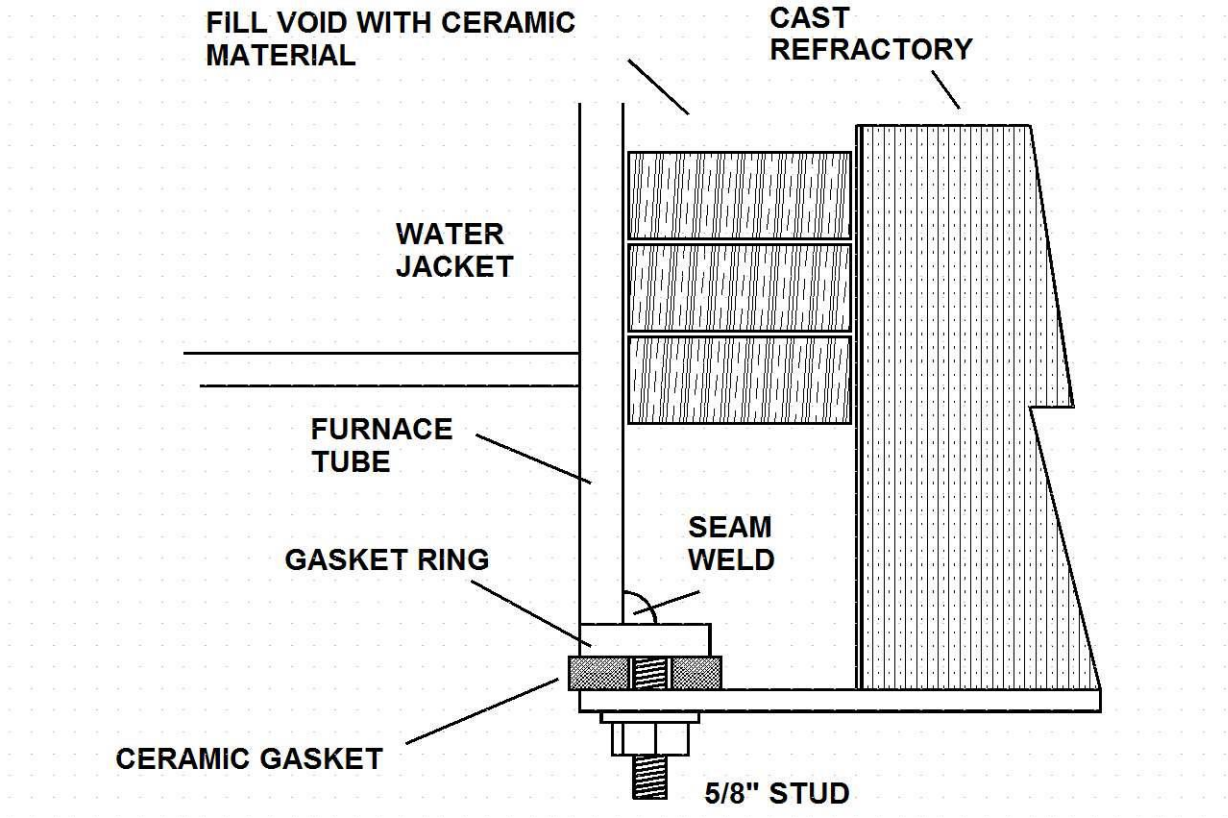
PART 2 - BURNER MOUNTING PLATE AND INSTALLATION

2.1 BURNER MOUNTING PLATE AND INSTALLATION

A. It is the responsibility of the burner installer to provide a burner mounting plate that shall facilitate the new burner. It shall have a minimum refractory depth of at least 8 inches and must provide an insertion depth for the burner head and its combustion zone, of at least 4 inches into or beyond the beginning of the water jacket. (As per the burner manufacturers' recommendations).

B. Once the existing burner and its mounting plate, refractory and throat tile are removed and disposed of, if the leading edge of the remaining furnace tube is less than 1 ½" in width, and/or if the upper portion of the furnace tube is also serving as the bottom of the smokebox, then it is the responsibility of the burner installer to add a furnace tube gasket ring to the furnace tube. The ring must be a minimum of 3/8" thick and shall be seam welded to the furnace tube to insure that a gas-tight seal is accomplished.

C. The new burner mounting plate shall be secured to the furnace tube gasket ring using minimum 5/8" bolts that shall protrude from the back surface of the furnace tube gasket ring, through the burner mounting ring. The bolts should extend approximately 2" beyond the face of the furnace tube gasket ring. Mounting bolts shall be spaced no greater than 12" apart on the circumference.



D. The joint between the gasket ring and the burner mounting plate, shall be filled with 1" ceramic material, cut to fit.

E. The void between the burner mounting plate cast refractory and the boiler furnace tube shall be filled with ceramic material, cut to fit and shall be at least 3 layers in depth.

PART 3 - BURNER MOUNTING

3.1 BURNER MOUNTING

A. The new burner shall be secured to the burner mounting plate using 5/8" bolts that shall extend from the back side of the burner mounting plate and protrude approximately 2". Mounting bolts shall be spaced as required by the burner mounting flange.

B. The burner mounting plate as a unit, shall contain a minimum of 8" of cast refractory or ram refractory, as recommended by the burner manufacturer. If the refractory insulation is deeper than the burner head, the refractory shall taper away from the burner head at a 45 degree angle, to insure that there is no flame impingement.

C. The joint between the burner mounting flange and the burner mounting plate shall use 1" ceramic gasket material, cut to fit.

D. Provide burner support to the floor as recommended by the burner manufacturer (Do not allow the burner mounting plate to bear the entire weight of the burner unless the burner is specifically designed for that purpose)

PART 4 - BURNER

4.1 BURNER

A. Provide a forced draft, flame retention type, automatic burner capable of firing to an output equivalent to 125 boiler horsepower (4,312 pounds of steam per hour).

B. It is the responsibility of the burner manufacturer to provide compliance with the requirements of the State of Illinois, Office of the State Fire Marshal, Division of Boiler and Pressure Vessel Safety; Underwriters Laboratories UL / ASME CSD – 1a (if applicable); NFPA – 8501, 8502, 8503, 8504 (if applicable) and/or any additional state or local codes that may apply.

C. Field verify the available gas pressure prior to ordering the burners.

D. Burner Functions

1. Burner operation shall be of the fully modulating firing rate type. The burner shall operate with minimal vibration and noise at the specified input rate. The burner must operate with 3.0% or less Oxygen, a carbon monoxide level of less than 15 p.p.m. and Nox levels of 30 p.p.m. or less in the products of combustion, throughout the entire firing range with a minimum firing rate turndown ratio of 7:1.
2. The burner housing shall be cast aluminum, mono-bloc type construction. The burner mounting flange must support the burner weight, independent of any support.
3. The burner shall be furnished with a stainless steel flame retention type of combustion head, capable of withstanding temperatures up to 1400 F. degrees. This combustion head shall incorporate a diffuser and sleeve that is to direct excess air either around the flame or directly through the diffuser vanes. Adjustment to the diffuser insertion shall be made external to the burner and can be made while the burner is in full operation.
4. The burner shall be equipped with a hinge or draw bar assembly that allows for full access to the burner drawer assembly, without removing the burner chassis from the boiler.
5. The burner shall have a flame inspection window positioned at the rear center of the burner housing. Flame shall be viewed without removing any covers.
6. Burner shall come complete with a high efficiency, totally enclosed, fan-cooled motor.
7. The sound rating of the burner shall not exceed 83 dBa, when measured at 3 feet from the burner.

E. Burner Control Panel

1. The burner package shall be equipped with an integral control panel consisting of necessary motor starters, overloads, lights and switches.

2. Indicating lights: Power on, call for heat, main fuel on and lock-out
3. Switches: Local-Off-Remote, Alarm silence

F. Burner Management System

1. The entire firing control sequence and flame supervision system shall be provided by a UL and FM approved, industrial type microprocessor based burner management system with matching system components for the control and supervision of the burner.
2. The following components and/or functions shall be integrated into the burner management system:

    a. Burner control with gas valve POC system.
    b. Electronic fuel/air ratio control system for a maximum of 2 actuators.
    c. Burner integral P.I.D. temperature/pressure control.
    d. VSD control

3. The system components including the display and actuators shall be connected via a bus system. Communication between the individual CAN bus users shall take place via a reliable, manufacturer provided, system-based data bus.
4. The system shall incorporate 2 micro-processors for 2 channel signal processing.
5. Digital outputs of the system shall be permanently monitored via a contact feedback network.
6. Flame supervision shall be provided by universal ultraviolet flame detectors.
7. The burner management system shall be operated and programmed with the help of the on-board display or a PC Tool.
8. The display shall also function as a Bac-Net interface for building management or other external systems.
9. Provide an additional touchscreen display. An additional display shall be provided that will communicate with the on-board display. Minimum 4.3” in size and will provide all pertinent data from the flame management system.
10. Combustion air switch shall be provided that will not allow the burner to fire if there is insufficient combustion air.
11. Provide Servo-driven combustion air control that is integral to and communicates with the flame management system via the CAN-bus network. Combustion air positioning must be as required to satisfy high fire purge, proven low fire start and proper positioning during on-line load controlling.
12. It is the responsibility of the burner manufacturer to provide burner management system compliance with the requirements of the State of Illinois, Office of the State Fire Marshal, Division of Boiler and Pressure Vessel Safety; Underwriters Laboratories UL / ASME CSD – 1a (if applicable); NFPA – 8501, 8502, 8503, 8504 (if applicable) and/or any additional state or local codes that may apply.

G. Acceptable burner manufacturers

1. Riello (ComTech 309.359.3084)
2. Weishaupt
3. Oilon

PART 5 - GAS TRAIN

5.1 GAS TRAIN

1. All main gas train components shall be installed as per the manufacturers' instructions and recommendations. This shall include manual valves, automatic valves, gas pressure switches, etc.
2. Gas train components shall be mounted in locations that do not obstruct combustion chamber openings or waterside clean-out openings. Gas train components shall not be located wherever water is present during normal blow-down procedures from low level cutouts or mud-leg blowdown valves.
3. It shall be the responsibility of the installer to provide main gas train compliance with the requirements of the State of Illinois, Office of the State Fire Marshal, Division of Boiler and Pressure Vessel Safety; Underwriters Laboratories UL / ASME CSD – 1a (if applicable); NFPA – 8501, 8502, 8503, 8504 (if applicable) and/or any additional state or local codes that may apply.

PART 6 - PILOT TRAIN

6.1 PILOT TRAIN

1. Natural gas shall be provided from the main gas supply, prior to the first manual shut-off valve and will be connected to the pilot shut-off valve that is located on the burner.
2. The Installer shall provide pilot gas train compliance with the requirements of the State of Illinois, Office of the State Fire Marshal, Division of Boiler and Pressure Vessel Safety; Underwriters Laboratories UL / ASME CSD – 1a (if applicable); NFPA – 8501, 8502, 8503, 8504 (if applicable) and/or any additional state or local codes that may apply.

PART 7 - VENTING

7.1 VENTING

1. All vents from gas valves, gas pressure regulators, gas pressure switches, or normally open vent valves, shall be piped as required by all applicable codes.
2. Gas pressure regulators shall be vented full-size(reducers are not allowed), with a line size increase for any additional devices. The installer has the responsibility of increasing the vent line size or installing additional vent lines, as necessary to satisfy all applicable codes.
3. Normally open vent valves shall be piped full size to outdoors, with no other vents added to this line.
4. Each boiler shall have dedicated vent lines, with no interconnection to other boiler.
5. The Installer shall provide vent compliance with the requirements of the State of Illinois, Office of the State Fire Marshal, Division of Boiler and Pressure Vessel

Safety; Underwriters Laboratories UL / ASME CSD – 1a (if applicable); NFPA – 8501, 8502, 8503, 8504 (if applicable) and/or any additional state or local codes that may apply.

PART 8 - CONTROLS

8.1 CONTROLS

1. Provide and install a new McDonnell Miller # 157 HD, combination pump control and low level cut-out. The 157 shall be equipped with new try-cocks and sight glass assembly, including gage glass valves.
2. Provide and install new steam pressure controls, including an L404a operating control, L404c manual reset high limit and an L91b firing rate control and an L4006a standby aquastat. The steam pressure controls shall each be piped to the 1” control header that connects the low level cutout to the upper steam drum connection, and will have their own ¼” pigtail fitting.
3. Include a new 6” steam pressure gauge.

PART 9 - ELECTRICAL

9.1 ELECTRICAL

A. If necessary, provide new circuit breaker and new wire from the main power distribution panel to the new burner disconnect switch for both boilers.

B. All conduit to gas train components will be sealtite flexible conduit run individually from an electrical junction box or to the burner control panel (interconnection of gas train components or jumping from one device to another, is not allowed). Junction boxes will be 8 x 8 with screw cover, or larger as required by NEC.

C. Boiler level controls, steam pressure controls and standby aqua-stat, can be wired using flexible conduit. Each control shall have an individual conduit run to a junction box. Interconnection of controls, one to another will not be allowed.

D. Wire nut connections will be allowed only when needed to connect two devices to one source of power. Controls that are in series, must have the wire looped from one control to the next with no wire connections or wire color changes. Field wire colors will match the color of the terminal to which they connect at the burner.

PART 10 - SYSTEMS COMMISSIONING

10.1 SYSTEMS COMMISSIONING

A. Start-up will be performed by a competent service person having a minimum of 5 years of experience, with a company who is a factory authorized representative of the burner that is provided and will provide a manufacturers training certificate.

B. Upon completion of the burner start-up and controls check-out, submit a complete report on the burner manufacturers start-up form. All applicable information must be provided.

C. Contact State Boiler Inspector and request inspection and approval of completed installation.

PART 11 - WARRANTY

11.1 WARRANTY

A. Two year parts and one year labor warranty will be provided and will commence from the date that the start-up and combustion analysis are performed on the last boiler.

PART 12 - REFERENCES

12.1 REFERENCES

A. Provide with the bid documents, a reference list with no less than 6 separate facilities, where burner replacement projects have been provided. The referenced projects must be of similar or larger size and scope, with an input rating of at least 4,000 MBH. (4,000,000 Btu/Hr)

B. The bidder must include; 2 examples of firebox boiler/burner conversions; 2 examples of scotch boiler/burner conversions and; 2 examples of water-tube type boiler/burner conversions.

1. Provide a minimum of 2) pictures of each example, from different angles showing quality of the workmanship of the burner installation, pipe fitting for the gas train components and the electrical connections to the boiler control devices.

END OF SECTION 23 9200