

PUBLIC NOTICE
INVITATION TO BID #1267

The Springfield Gas Department will be accepting sealed bids for an **Indirect Natural Gas Fired Line Heater**.

Specifications and bid requirements may be downloaded at www.springfieldtn.gov. Contact Mike Stafford at (615) 382-1621 Ext. 226 with questions. Please reference **BID NUMBER 1267** on the outside of the sealed envelope. Sealed bids must be received in the Office of the City Recorder, 405 N. Main Street, Springfield, TN 37172 by 2:00 PM local time, Tuesday, December 5, 2023.

The City reserves the right to reject any or all bids.

Lisa H. Crockett
City Recorder

**Springfield Gas Department
Bid# 1267 Indirect Natural Gas Fired Line
Heater**

Notice to all Bidders

- 1) All bid responses must be returned in a sealed envelope that displays the bid number and date and time of bid opening on the outside of the envelope.
- 2) Include two copies of your bid.
- 3) Any exceptions to the enclosed specifications must be disclosed.
- 4) Make sure that your bid is signed and that your company is identified on the response sheet.
- 5) Make sure to include a signed Iran Divestment Form.
- 6) Any deviations from the above-mentioned requirements will result in the bid being rejected and returned to the bidder.
- 7) The City reserves the right to reject any and all bids.

For questions contact:

Mike Stafford

Springfield Gas Department

615-382-1621. Ext. 226

Email: mike.stafford@springfieldtn.gov

Specifications for a Natural Gas Indirect Fired Line Heater.

Data for design	Maximum flow 100 MCFH
MAOP: 1,200 PSIG	Inlet temp: 40 deg f
Max NOP inlet pressure 600 PSIG	Heater outlet temp 45 deg f
Minimum inlet pressure 400 PSIG	Station outlet temp 78 deg f
Minimum outlet pressure 150 PSIG	

Glycol type and ratio water to glycol	inhibited ethylene 50/50
process fluid natural gas	specific gravity 0.6 gas BTU 1,060 ft3

Proposed heater sizing	Heater firing rate 200,000 BTU/HR
Calculated heat load 103,817 BTU	Burner firing rate 285,714 BTU/HR
necessary Operating bath temperature 158 deg f	Maximum bath temperature 180 deg f

Heater shell/ Stack/ Expansion tank design code API 12k

Heater shell diameter 24 inch	Number of fire tubes one (1)
Heater shell length 96.00 inches	Fire tube o.d. 6.630
Heater shell thickness 0.250 inch	Fire tube length required 156 inches
Shell fluid capacity	Flux rate 8,863 BTU/HR3

Stack material carbon steel	Expansion tank material carbon steel
Number of stacks one (1)	Expansion tank insulated no
Stack diameter 6.630 inches	Expansion tank diameter 10.750 inches
Stack height 96 inches	Expansion tank length 30.00 inches
Exiting stack temp 875 deg f	Percent of shell fluid capacity 7.42%

Process coil

Fabrication code standard Process	ASME sec VIII div 1 National board u-stamp
coil MAWP 1200 PSIG Design	Radiography type & percentage 100% x-ray
temperature -20 to 120 deg f	Min. test pressure: 1800 PSIG hydrotest for 4 hr min

Pipe o.d. size 2.375 inch	Number of parralel paths 1
Pipe wall thickness 0.218	Number of passes per path 6
Corossion allowance 1/16	Total number of pipes 6
Surface area required 20.43 ft2	Total straight length of pipes 39.00 ft Designed
Header no.	surface area 24.52 ft2
Header size & wall thickness 2.375 inch 0.218 inch	Tube side wall velocity @max inlet PSIG 27.8
Inlet flange size & rating 2.375 inch Ansi 600#	Tube side wall velocity 2 min PSIG
Outlet flange size & rating 2.375 inch	Header TSV @ max inlet PSIG 27.80 ft/sec
Pressure drop across coil 1.51 PSIG	Header TSV @ min inlet PSIG NA
Fuel gas preheat coil 1.32" o.d. Sch 80x 64 inch long. To be tested to 1500 PSIG	

Design criteria

Process fluid	Natural gas (0.6 sp. Gr.)
Heat transfer medium	50-50 inhibited ethylene glycol
MAWP- MAOP	1,200 PSIG
Process gas flow (max.)	100 mcfh
Max inlet process gas pressure (nop for sizing)	600 PSIG
Process gas inlet temperature	40 deg f
Calculated process gas outlet temp required	78 deg f
Minimum process gas pressure after regulation	150 PSIG
Process gas temperature after regulation	45 deg f
Calculated process duty needed	103,817 btu/hr
Heater design process duty	200,000 btu/hr
Operating bath temperature	158 deg f

Fuel train:

The fuel train will be supplied from the process gas outlet (heated gas side) header and will be designed to the MAOP of the process coil. Complete with the following major components:

Instrumentation to main burner:

1. one 1" Apollo 73 carbon steel ball valve
2. one 1" Fisher 627 70-150# spring range
3. one 1/4" Apollo 76f stainless steel ball valve
4. one 2 1/2" 0-100 psig stainless liquid filled 1/4" NPT lower mount guage
5. one 3/4" Apollo 76f stainless steel ball valve
6. one 3/4" Fisher h202 3/4" NPT relief valve set at 100 psig
7. one 1" Wye strainer 800# stainless steel w/ 1/4" Apollo 76 ball valve
8. one 1" Apollo 73 carbon steel ball valve
9. one 1" Apollo 73 carbon steel ball valve
10. one 1" Fisher 627 5-20# spring range
11. one 3/4" Apollo 76f stainless steel ball valve
12. one 3/4" Fisher h202 3/4" npt relief valve set at 35 psig
13. one 1/4" Apollo 76 f stainless steel ball valve
14. one 2-1/2" 0-30 psig stainless steel liquid filled 1/4" npt lower mount guage
15. one 1" Kimray 130smt-dab-d emergency shutdown control valve
16. one 1/4" Apollo 76f stainless steel ball valve
17. one 2-1/2" 0-30 psig stainless steel liquid filled 1/4" npt lower mount guage
18. one Kimray 130smt-dab-d burner control valve
19. one 1/4" Apollo 76f stainless steel ball valve
20. one 2-1/2" 0-30 psig stainless steel liquid filled 1/4" npt lower mount guage
21. one 1" Apollo 73 carbon steel ball valve

Instrumentation to pilot burner:

22. one 1/4" Apollo 76f stainless steel ball valve
23. one lot of 304 stainless steel tubing and stainless steel swagelok fittings.
24. one Fisher 67cfr pressure regulator 1/4" npt 250# body 0-35 spring range (set @ 5-7 psig)
25. one 2" 0-15 psig stainless steel liquid filled 1/4" npt center back mount gauge.
26. one Asco class 1 div 1 stainless steel solenoid valve (spitfire sol-1a).
27. one 1/4" Apollo 76f stainless steel ball valve.
28. one 2-1/2" 0-15 psig stainless steel liquid filled 1/4" npt lower mount gauge.
29. one 1/4" Apollo 76f stainless steel ball valve.

Instrumentation controls

30. one 1/4" Apollo 76f stainless steel ball valve.
31. one lot of 304 stainless steel tubing and stainless steel swagelok fittings.
32. one Fisher 67cfr pressure regulator 1/4" npt 250# body 0-35# spring range (set @ 5-7 psig).
33. one 2" 0-30 psig stainless steel liquid filled 1/4" npt center mount gauge.
34. one high bath temperature thermostat Kimray T12 (HAA) w / ss thermowell.
35. one 2" 0-30 psig stainless steel liquid filled 1/4" npt center back mount gauge.
36. one Linc 282-2112 low level bath float.
37. one 2" 0-30 psig stainless steel liquid filled 1/4" npt center back mount gauge.
38. one normal operator bath thermostat Kimray T12 (HAA)w / ss thermowell.
39. one 2" 0-30 psig stainless steel liquid filled 1/4" npt center back mount gauge.
40. one process gas thermostat Kimray T12 (HAA) w/ ss thermowell.
41. one 2" 0-30 psig stainless steel liquid filled 1/4" npt center back mount gauge.
42. one Ashcroft class 1 div 1 stainless steel pressure switch (spitfire ps -15x).
43. one 1/4" npt flow control valve (spitfire p-17).
44. one Asco class 1 div 1 stainless steel solenoid valve (spitfire).
45. one 2-1/2" 0-30 psig stainless steel liquid filled 1/4" npt lower mount gauge.
46. one 0-250 deg f bi metal bath thermometer (3" dial 6" long stem) w / ss thermowell.
47. one 0-250 deg f bi-metal bath thermometer (3" dial 2" long stem) w / ss thermowell.
48. one AC lightning series Spitfire burner management system.

1. Heater shell

one 24 inch I.D. x 96 inch long.

2. Heater shell insulation

Heater shell shall be insulated with 1-1/2" thick fiberglass/mineral wool and covered with 0.024" stucco embossed aluminum jacketing.

3. Heater drain valve

one 2 inch stainless steel ball valve with plug.

4. Expansion tank

one 10.75 inch O.D. x 30 inch long SA53B/ERW horizontal tank complete with 4 inch sentinel thief hatch and one red line sight glass with gauge cocks for fluid level reading.

5. Firebox "U" - tube

one 6.63 inch o.d. x 156 inch long oval (inside heater shell) fire box designed in accordance with API 12 K.

6. Flu stack

one 6.63 inch o.d. x 96 inch tall stack with 6.63 inch nominal clean out tee (SA53B/ERW).

7. Equalized stack head

one removable flameco aluminum equalized stack head with bird screen.

8. Process coil

one removable process coil assembly sized accordingly from " Design Criteria " Data provided.

Specifications

design code:	ASME section VIII division 1(U- stamp)
design pressure (MAWP/MAOP)	1,200 psig
Design temperature	,-20 to 120 deg f
Radiography	100% x-ray
Corrosion allowance	1/16"
Pipe size/wall thickness/material	2.375 inch / 0.218 inch / SA106B
Number of tube paths/passess	1 path / 6 passess total tubes = 6
Coil inlet and outlet flanges	2.375 ANSI 600#
Total coil straight length	39 linear ft
Coil surface area	24.52 ft ²
Max pressure drop @ max conditions	3.5 psig
(coil straight length & surface area calculated inside the heater shell)	

Inlet and outlet coil headers will be complete with the following connections:

Four 3000# threaded connections

Two 3/4" 3000# / 6000# threaded connections

Two 1/2" 3000# / 6000# threaded connections

The coil will be tested for a minimum period of four hours at 1.5 times design pressure to prove the required 1.3 times design pressure per ASME code

9. Fuel gas preheat coil

1.32" o.d. sch80 x 64 long. To be tested to 1500 psig.

10. Flame arrestor & burner assembly

one Flameco flame arrestor designed in accordance with API RP-12N

one 1-1/2" eclipse mixer with 1-1/2" bell burner nozzle.

10. Continued

one Spitfire patented, quality controlled, pilot assembly with stainless steel #72 orifice.

Springfield Gas System would need all of the following records:

1. Proof of warranty from time of installation.
2. ASME U1A data report
3. Radiography interpretation sheets for all coil butt welds
4. MTRs for all pressure retaining parts.
5. Hydro chart w/ equipment calibration records.
6. GSM inspection checklist..
7. PT all threaded connection welds on coil.
8. ASME design code calculations.
9. WPS/PQR/WPQ.

Springfield Gas will consider other brands of components, but reserves the right to decide what manufacturer more closely fits our specifications.

Note: Please include in your quote the install / start up fee as well.

The City of Springfield reserves the right reject any and all bids.

BID INFORMATION FORM FOR:

Natural Gas Indirect Fired Heater

Bid #1267 Opening Tuesday, December 5, 2023 at 2:00 PM Local Time

Please fill out this form and submit with any other bid information you wish to include.

COMPANY NAME	
TOTAL PRICE	
DELIVERY	
OTHER	

The City of Springfield reserves the right to reject any and all bids.

IRAN DIVESTMENT ACT NOTICE

Tenn. Code Ann. § 12-12-106 requires the chief procurement officer to publish, using credible information freely available to the public, a list of persons it determines engage in investment activities in Iran, as described in § 12-12-105.

For these purposes, the State intends to use the attached list of “Entities determined to be non-responsive bidders/offerers pursuant to the New York State Iran Divestment Act of 2012.”

While inclusion on this list would make a person ineligible to contract with the state of Tennessee, if a person ceases its engagement in investment activities in Iran, it may be removed from the list.

If you feel as though you have been erroneously included on this list please contact the Central Procurement Office at CPO.Website@tn.gov.

List Date: May 4, 2022

Source: <https://www.ogs.ny.gov/iran-divestment-act-2012>

1. Ak Makina, Ltd.
2. Amona
3. Bank Markazi Iran
(Central Bank of Iran)
4. Bank Mellat
5. Bank Melli Iran
6. Bank Saderat Iran
7. Bank Sepah
8. Bank Tejarat
9. China Precision Machinery
Import- Export Corporation
(CPMIEC)
10. ChinaOil (China National United
Oil Corporation)
11. China National Offshore Oil
Corporation (CNOOC)
12. China National Petroleum
Corporation (CNPC)
13. Indian Oil Corporation
14. Kingdream PLC
15. Naftiran Intertrade Co. (NICO)
16. National Iranian Tanker Co.
(NITC)
17. Oil and Natural Gas Corporation
(ONGC)
18. Oil India, Ltd.
19. Persia International Bank
20. Petroleos de Venezuela
(PDVSA Petróleo, SA)
21. PetroChina Co., Ltd.
22. Petronet LNG, Ltd.
23. Sameh Afzar Tajak Co. (SATCO)
24. Shandong FIN CNC Machine
Co., Ltd.
25. Sinohydro Co., Ltd.
26. Sinopec Corp. (China
Petroleum & Chemical
Corporation)
27. SKS Ventures
28. SK Energy Co., Ltd.
29. Som Petrol AS
30. Unipet (China International
United Petroleum & Chemicals
Co., Ltd.)
31. Zhuhai Zhenrong Co.

IRAN DIVESTMENT ACT

“By the submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not a person included within the list created pursuant to § 12-12-106.”

Signature: _____

Date: _____

Title: _____