**.**

**ENERGY COORDINATING AGENCY**

**106 West Clearfield Street**

**Philadelphia, PA 19133**

Dear Heating Contractor:

As in past years, ECA is receiving a grant from the Pennsylvania Department of Community and Economic Development through monies authorized by the Low Income Home Energy Assistance program (LIHEAP). The LIHEAP Crisis heater repair program helps low-income households restore heat and decrease energy consumption and costs.

At this time, ECA is seeking qualified contractors to complete heater installations for the LIHEAP Crisis program. If your company is interested in participating as a new contractor or continuing as an existing contractor, please read the attached work specifications and respond to the attached contractor questionnaire.

Please review the attached guidelines, which include specifications for installation work. These specs indicate the type of work that is being funded through ECA as well as the reimbursement rates. **Please note that we are asking for a 5-year material and labor warranty on 90-95% condensing boilers, we are asking for a 3 year warranty on 80% gas and oil units and a 3-year material and labor warranty on all condensing furnaces. In addition, all oil-fired furnaces must be “ENERGY STAR” rated.**

Carefully review the attached specifications for each repair. These prices are fixed and non-negotiable for the duration of this project. ECA will evaluate your proposal along with all of the other proposals received in response to this solicitation. **Responses will be evaluated based on experience in residential heating work; qualifications for the proposed work; proposal quality; adequate insurance and appropriate licensing and certifications. Please pay particular attention to the attached “Program Requirements,” as this document answers some of the commonly asked questions raised by contractors.**

**Please connect with us via email or phone if interested.**

Thank you for your interest in the ECA’s Crisis Heater Repair Program. If you have any questions, please call:

Cynthia Olidge (215) 609-1028 | cynthiao@ecasys.org

Charmaine Johnson (215) 609-1025 | charmainej@ecasys.org

William Lloyd (215) 964-2609 | williaml@ecasys.org

Javier Ramos (215) 318-2344 | javierr@ecasys.org

Sincerely,

Cynthia Olidge

Director of Heating

**Contractor Questionnaire**

**Please complete the following and submit along with your proposal; use additional space if necessary**

Name of Contractor:

Business Address:

Date Submitted:

Describe your experience as a heating contractor for weatherization or other low-income housing repair programs.

List at least two references who will vouch for the quality of your work and responsiveness to customer or client concerns.

Include a list of the applicable City of Philadelphia business and trade licenses, which your company holds. Note: you must have the following licenses:

* + - 1. City of Philadelphia commercial activity license
			2. \*City of Philadelphia warm air license\*
			3. City of Philadelphia contractor license

\***New** contractors must provide proof of warm air license to show experience and professional workmanship with warm air installations. License may be up to date or expired.\*

Provide evidence of insurance meeting the following requirements:

* Comprehensive general liability with a combined limit of $1,000,000 general occurrence and $2,000,000 general aggregate
* Vehicle insurance Personal injury:$250,000 per person, $500,000 per occurrence
* Worker’s compensation:$500,000 or, if greater, minimum required by law
* Insurance certificate must name ECA as additionally insured.
* As of July 1, 2009, all contractors in the state of Pennsylvania with home improvement contracts of greater than $5000 must register with the **PA Attorney General Home Improvement.** Please attach evidence that you have registered as a contractor with the Attorney General.

As of April 2010, any contractor doing repair or remodeling work on child-occupied facilities built prior to 1978 must have **EPA Certification** to conduct lead-based renovations. Please provide evidence that your company is certified as a **“lead renovator**” and that at least one of your employees has attended the required lead renovation training, and **OSHA 30** needed.

If you are certified as M-DBE and or DS-DBE please send certificate.

**LIHEAP Crisis Heater Repair**

**Program Requirements**

1. When replacing a gas system, the preferred option is to install a 95% high efficient condensing gas system where conditions permit.(\***Basements that are damp and or moist, have sewage and or water leakage are not acceptable conditions, for the installation of a condensing systems.)** If there is an existing gas fired hot water tank that is vented into an unlined chimney, the chimney must receive a stainless steel line.
2. The contract price of a gas or oil furnace covers the cost of connecting to a pre-existing cold air return. If you must replace the cold air return boot or box, install one with an external filter rack. Please explain to the homeowner how to change the air filter. (\***External Filter racks are not to be used in the program, Per State Inspector.\*)**
3. If there is no pre-existing cold air return (e.g. old system is gravity air), you may bill for installing a complete cold air return. If there is a cold air return but it is damaged or too small, you can bill for the appropriate amount of ductwork to complete a cold airdrop (see spec number 6 above). All duct joints and panning connections in the cold air return must be sealed with mastic. In addition, any new supply connections, such as a new supply plenum, transition, or trunk line that you install must be sealed with mastic.
4. All hot water boilers (gas or oil fired) must have a combination water feeder/back flow preventer with relief extension pipe installed. This is considered part of the basic hot water boiler system installation. If a new expansion must be installed, you may bill $150 additional. Expansion tanks located in a second floor closet should be capped off and a new diaphragm style tank installed near the heater.
5. Chimney repairs: If a serviceable liner already exists, a new liner should not be installed. All 80% installations must be vented into a tile or metallic chimney liner. For installations, where the existing chimney is in poor condition, a new stainless steel liner must be installed.

**(\* Flexible Liners are not to be used in the program.\*)**

1. Condensing furnace installations: Contractors must use a two-pipe system, one pipe to vent flue gases, and one pipe to bring in combustion air. There must be a 12” separation between the vent and intake pipe terminations. Terminations must have screens.
2. Steam installations: An automatic water feed must be installed. Replace the horizontal (wet) return if the old one is leaking or damaged using 1” copper minimum.
3. Inspections: ECA will inspect all heater installations. Some of the items we will be inspecting are as follows:
	1. Old equipment and jobsite debris must be removed from worksite.
	2. Cold air return and any new supply duct joints must be sealed with mastic.
	3. Heater is placed on 4” blocks, except where low head clearance will not permit.
	4. There must be an operable service switch and outlet near heater.
	5. Isolation valves installed on supply and return piping on hot water boilers.
	6. Any new return air box must have an external air filter rack and there must be a cover on the air filter slot. Contractor must explain to homeowner how to replace air filter. **(\* External filter racks are not to be used in the program. Per State Inspector\*)**
	7. On oil installations, a new oil filter must be installed, along with a tiger loop. If there is an existing oil filter, the cartridge must be replaced. All oil line connections must be leak-free. **(\*Compression fittings are not to be used in the program.\*)**
	8. On hot water and steam installations, an extension pipe must be connected to the pressure relief valve to divert overflow onto the floor. **Extension pipe should extend to within 6” of the floor.**

I There must be **heater efficiency test** results on each installation. ECA inspectors will be looking for the test port where the combustion efficiency tests are taken. Jobs that are submitted with no test results (this includes 95% furnaces and boilers), will be considered incomplete and returned to the contractor. **Permits are for both gas and oil furnaces**. (\* Per City of Philadelphia \*)

**LOW INCOME WEATHERIZATION AND HEATER REPAIR PROJECT**

**HEATER REPAIR SPECIFICATIONS**

**Proposal Package and Guidelines for Contractors**

**September 2020**

**ECA Heater Repair Programs – Program Guidelines**

**1. Background**

The Energy Coordinating Agency (ECA) is a local administrator for the CRISIS heater repair project. At this time, ECA is soliciting local HVAC firms to participate as contractors.

The names of clients who are eligible for these programs will be referred to ECA by the CRISIS intake office located at the Department of Welfare office at Broad Street and Sedgley Avenue. In most cases, an ECA technician will make a service call to repair or service the heating system. If the heating system is beyond repair, the ECA technician will recommend that a new heater be installed. ECA will e-mail the names of selected clients to heating contractors, along with an authorization to replace the heating system. Contractors are expected to contact eligible clients within 48 hours of receiving authorization from ECA and start work within 96 hours. Most installations should be completed in one day.

ECA will be responsible for issuing work orders, inspecting work and paying contractors in a timely manner for work that meets performance standards. All installation work will be contracted out using pre-determined line item pricing (see attached) and all subcontracted work will be inspected. Please read the attached specs and pricing carefully.

Contractors are expected to promptly bill ECA for work as soon as it is completed. The contractor invoice must show material and operating costs listed separately. ECA will inspect **all installations** to insure that the work is done according to the standards set out below. Please consult the attached “Heater Inspection Checklist,” which specifies the items that ECA inspectors will be looking for.

Contractors must provide a heat loss analysis of the house based on Manual J or a similar method of sizing a replacement heating system. ECA asks that you provide a picture of the **new unit** as well as the **old** **unit** being replaced, contractors must also provide a “Heating System Installation Checklist” (see attached) with every installation.

**2. Scope of Work**

In most cases contractors will be installing a house heater that has been determined to be beyond repair. In some cases, contractors will be authorized to perform repairs on a heating system that is repairable. Following is the scope of work and pricing for the work that is anticipated in this project. Please note that per ECA’s contract with our funding agency, DCED, **we may not exceed $7750** in expenditures on one residence. Contractors must submit a change order form to ECA for any residence that exceeds that amount

**A. Heater Replacement:**

**1. Gas hot water boiler installation – 90 - 95% efficiency**

1. Install new gas fired, direct vent condensing boiler with an AFUE rating of at least 90 - 95%. Condensing boiler shall be properly vented through sidewall using approved vent pipe, maintaining clearances recommended by manufacturer. Contractor shall install fresh air intake using approved piping and maintaining proper clearances. All combustion air must be taken from outside using dedicated combustion air intake piping. All terminations must have screens.
2. Installed boiler must include circulator pump, relay, electric wiring **(\*Romex must be ran through joists)**,provide an electric shut off switch and outlet, new thermostat if needed, gas shut off valve, gas piping **(\*Tracpipe must be grounded at ground rod)**, necessary piping to connect new boiler to existing lines, isolation valves on supply and return piping. Contractor must install an extension pipe off the pressure relief valve terminating within 6” of the floor.
3. All hot water boiler installations must have an automatic water feed/back flow preventer with a relief extension pipe. Replace expansion tank only if leaking or defective with a properly sized diaphragm expansion tank ($150 allowance for the installation of expansion tank).
4. Contractor shall configure piping for primary/secondary circulation if required by manufacturer and install additional circulator if called for by the manufacturer.
5. Gas piping incidental to the installation of the boiler is considered part of the job. Contractor may bill for additional gas piping only if horizontal gas runs are needed, e.g. location of boiler is changed. The allowance for horizontal gas pipe is $13 per foot.
6. Electrical connections incidental to the installation of the boiler are also considered part of the job. Contractor may bill additional for electrical work ($150) only if a new electrical circuit must be added.
7. Acceptable models include **Utica UB90 series, Peerless PF or PI series, Crown BWC series, Dunkirk Q90 series, Bryant BW9A series, Biasi RIVA plus, Weil-McLain UG series, Burnham FCM series, Viessman WB1A series, Buderus GB 142, Williamson GWC series, HTP UFT series, Bosch KBR series** and others that meet the standards given above.
8. Place boiler on 4” masonry base or approved stand. If boiler is wall mounted, follow manufacturer’s recommended installation procedure. Remove old equipment and related debris from site.
9. Contractor shall provide a **5-year warranty on parts and labor.** Please consult with boiler manufacturer for details on purchasing the extended warranty.

 **Price: 90% AFUE boiler: $6550**

 **Price: 95% AFUE boiler: $7285**

**2. Gas hot water boiler installation – 80% efficiency**

1. Install new gas fired atmospherically vented boiler. Installed boiler must include circulator pump, relay, electric wiring **(\*Romex must be ran through joists)**, provide a electric shut off switch and outlet, new thermostat if needed, gas shut off valve, gas piping **(\*Tracpipe must be grounded to ground rod)**, necessary piping to connect new boiler to existing lines, isolation valves on supply and return piping. Contractor must install an extension pipe off the pressure relief valve terminating within 6” of the floor.
2. All hot water installations must have an automatic water feed/back flow preventer with a relief extension pipe. Replace expansion tank only if leaking or defective with a properly sized diaphragm expansion tank ($150 allowance for the installation of expansion tank).
3. Install a bypass pipe between the supplies and return piping at the boiler. To reduce costs, consider using a small section of ¾ copper between the supply and a return; a ball valve is not necessary.
4. Boiler must be sectional cast-iron design, must have pilot-less ignition and tight closing vent damper, and must have an AFUE rating of at least 82%. Gas piping incidental to the installation of the boiler is considered part of the job. Contractor may bill for additional gas piping only if horizontal gas runs are needed—e.g. location of boiler is moved. Electrical connections are also considered part of the job. Contractor may bill additional for electrical work ($150.00) only if a new electrical circuit must be added.
5. Acceptable models include **Weil McLain CG series, Buderus GC series, Burnham Series 202, Crown AWR series, Williamson GWA series, Columbia MCB, Utica UB15 series** and others that meet the standards given above. **(\*We are no longer accepting the Slant Fin and Force boilers for this program)**. Place boiler on 4” masonry base. Remove old equipment and related debris from site.
6. **Contractor must provide a 3 year warranty on parts and labor.**

**Price: $4300**

**3. Oil hot water boiler installation**

* 1. Install new oil fired atmospherically vented boiler. Installed boiler must include circulator pump, relay, electric wiring **(\*Romex must be ran through joists)**, provide new electric shut off switch and outlet, new thermostat if needed, oil supply line as needed, new oil filter or filter element, necessary piping to connect new boiler to existing lines, isolation valves on supply and return piping.
	2. Replace flue pipe and install a functioning barometric damper.
	3. A new automatic water feeder/back flow preventer with a relief extension pipe shall be installed. Replace expansion tank only if leaking or defective with diaphragm expansion tank. Boiler must be sectional cast-iron design equipped with flame retention burner and must have an AFUE rating of at least 83%. **Do not install steel or dry-base oil hot water boilers.** Acceptable models include **Crown TWI series, Williamson OWB series, Columbia CSFH series, Biasi B10 boiler, Weil McLain Gold series, Utica BC series,** and others that meet the given standards.
	4. Place boiler on 4” masonry base. Remove old equipment and related debris from site.
	5. **Contractor must provide a 3 year warranty on parts and labor.**

**Price: $4850**

**4. Gas fired steam boiler installation**

* 1. Install new gas fired steam boiler equipped with low water cut off and pressuretrol. Replace electric wiring **(\*Romex wire must be ran through joist)**, provide electric shut off switch and outlet, new thermostat if needed, gas shut off valve, gas piping **(\*Tracpipe must be grounded at ground rod)**,connect new boiler to existing lines, new flue pipe. Please insure that the boiler is equipped with a blow down valve and demonstrate its operation to the client.
	2. Replace or repair Hartford Loop and near boiler piping as needed. If needed, contractor may bill for replacement of horizontal wet return lines if corroded, leaking, or undersized. The allowance for replacing wet return or steam supply is $19.00 per foot for pipe 1” or less and $19.80 per foot for pipe 1 ¼” and larger.
	3. Install automatic water feed matched to low water cut off. Boiler must be sectional cast-iron design, must have pilot-less ignition and tight closing vent damper, and must have an AFUE rating of at least 80%. Acceptable models include **Crown BSI series, Columbia CEG series, Utica PEG series, Williamson GSA series** and other that meet the given standard.
	4. Place boiler on 4” masonry base. Remove old equipment and related debris from site.
	5. **Contractor must provide a 3-year warranty on parts and labor.**
	6. **New steam header if needed add $600 2” pipe $800 3” pipe.**

**Price: $5250**

 **5. Oil fired steam boiler installation**

1. Install new oil fired steam boiler equipped with low water cut off and pressuretrol. Replace electric wiring **(\*Romex must be ran through joists)**, provide electric shut off switch and outlet, new thermostat if needed, oil supply line, new oil filter or filter element.
2. Replace or repair Hartford Loop and near boiler piping as needed. Replace horizontal (wet) returns lines with minimum 1” copper or larger only if existing return is corroded or leaking. The allowance for replacing wet return or steam supply is $19.00 per foot for pipe 1” or less and $19.80 per foot for pipe 1 ¼” and larger.
3. Install automatic water feed matched to low water cut off. Boiler must be sectional cast-iron and burner must be high static pressure, flame retention oil burner. Acceptable models include **Crown TWZ series, Columbia CSFH series, Weil McLain gold series, Williamson OSB series** and others that meet the given standard.
4. Replace flue and install a functioning barometric damper.
5. Place boiler on 4”masonry base. Remove old equipment and related debris from site.
6. **Contractor must provide a 3 year warranty on parts and labor.**
7. **New steam header if needed add $600 2” pipe $800 3” pipe.**

**Price: $5900**

**6. Gas fired warm air furnace installation – condensing furnace**

The preferred option for a house with a gas forced air furnace is a single stage 92-95% efficient condensing gas furnace. Consult the manufacturer’s guidelines for the specific venting requirements that apply to your furnace. There must be adequate clearances exist so that the condensing furnace can be properly vented through a sidewall. Always use a two-pipe system—one pipe for venting the furnace and one for bringing in outside combustion air.

Acceptable models include **Goodman GMH 95 series, Coleman TG95 series, Ducane CG95TB series,** **Airtemp VG7SD/M and VG7SC/L series, Gibson KG7SC/D series** and other efficient gas furnaces with an AFUE of at least 92-95% that are approved for horizontal venting.

* 1. Install new gas fired warm air furnace. Replace electric wiring **(\*Romex must be ran through joists)**, provide electric shut off switch and outlet, new thermostat as needed, new gas shut off valve, gas piping (**\*Tracpipe must be grounded at ground rod)**. Install new supply plenum or make transition to old supply plenum if practical.
	2. Ensure that there is a cold air return box or boot that with an external air filter rack. If there is no existing cold air return, contractor must install an adequately sized closed cold air system with a return grille and a return air box or boot with an external air filter rack. The allowance for a complete cold air return is $500. If a cold air return exists but is damaged or undersized, you may bill the following:
		1. **Add a return boot or return plenum with external air filter rack: $175**
		2. **Add up to 6 feet of vertical return drop plus new boot or return plenum: $300**
		3. **Add new appropriately sized return grille: $60**
	3. Seal all return air duct joints and any new supply plenum connections with mastic.
	4. Condensing furnace must be properly vented through a sidewall with approved vent pipe and approved drainage mechanism for removal of condensate. Contractor must install a two-pipe system, with one vent pipe and one pipe bringing in combustion air to the furnace. There must be a 12” clearance between the vent pipe and combustion air pipe terminations. Terminations must have screens.
	5. Contractor must show homeowner how to change the air filter.
	6. Place furnace on 4” masonry base. Remove old equipment from site.
	7. **Contractor must provide a 3-year warranty on parts and labor.**

**Price: $4200**

**7. Gas fired warm air furnace installation – 80% efficiency furnace**

1. Install new gas fired warm air furnace. Replace electric wiring**(\*Romex must be ran through joists)**, provide electric shut off switch and outlet, new thermostat as needed, new gas shut off valve and gas piping **(\*Tracpipe must be grounded at ground rod)**. Install new supply plenum or make transition to old supply plenum if practical. Install a cold air return box or boot that has an external air filter rack.
2. Ensure that there is a cold air return box or boot that with an external air filter rack. If there is no existing cold air return, contractor must install an adequately sized closed cold air system with a return grille and a return air box or boot with an external air filter rack. The allowance for a complete cold air return is $500. If a cold air return exists but is damaged or undersized, you may bill the following:
	* + 1. **Add a return boot or return plenum with external air filter rack: $175**
			2. **Add up to 6 feet of vertical return drop plus new boot or return plenum: $300**
			3. **Add new appropriately sized return grille: $60**
3. Seal all return air duct joints and any new supply plenum connections with mastic. Chimney vented furnaces must have induced draft venting and have an AFUE rating of at least 80%. Acceptable models include the **Coleman FC8S series, Goodman GMS8 series, Ducane MPGA series, Airtemp VG7SA series and Gibson KG7SA** and other gas furnaces with an AFUE of at least 80%. All 80% gas furnaces must be vented into a lined chimney.
4. Place furnace on 4” masonry base. Remove old equipment from site. Contractor must explain to homeowner how to change the air filter.
5. **Contractor must provide a 3-year warranty on parts and labor.**

**Price: $3025**

**8. Oil fired warm air furnace installation**

* 1. Install new oil fired warm air furnace along with new oil line as needed. Install new oil filter or oil filter insert. Replace electric wiring, provide electric shut off switch and outlet, new thermostat as needed. Install new supply plenum or make transition to old supply plenum if practical.
	2. Ensure that there is a cold air return box or boot that with an external air filter rack. If there is no existing cold air return, contractor must install an adequately sized closed cold air system with a return grille and a return air box or boot with an external air filter rack. The allowance for a complete cold air return is $500. If a cold air return exists but is damaged or undersized, you may bill the following:
		1. **Add a return boot or return plenum with external air filter rack: $175**
		2. **Add up to 6 feet of vertical return drop plus new boot or return plenum: $300**
		3. **Add new appropriately sized return grille:$60**
	3. Seal all return air duct joints and new supply duct connections with mastic.
	4. Furnace must have an energy star rating with an AFUE rating of at least 85%. Acceptable models include the following: **Arcoaire OLR series, Bryant OBM series, Crown CHB, or CLB series, Kerr K4C series, Boyertown Regal Series, Rheem ROCA series, Airtemp RHF series, Williamson PMP series** and others than meet the stated rating.
	5. Place furnace on 4” masonry base. Remove old equipment from site. Contractor must show homeowner how to change air filter.
	6. **Contractor must provide a 3-year warranty on parts and labor.**

**Price: $4100**

1. **Item: additional charge for heating unit with BTU input above 120,000 BTU: Add $290 per 50,000 BTU input above 120,000**
2. **Item:** Install a complete cold air return ducted to the first floor of residence to include a return air grille, panning, vertical return duct, and a return boot or return box equipped with an external air filter slot with cover. Seal panning, duct joints, and return air boot or box connections with mastic. **Price $500.00**

**B. Chimney repairs:** The decision to install a stainless steel chimney liner may in some cases be made by the contractor. Please note that if a serviceable liner already exists in the property, then a new liner should not be installed. All 80% gas fired warm air furnaces installed in this project must be vented into a metallic or a sound tile liner. For other types of installations, a liner must be installed if the existing chimney is in poor condition; for example, collapsed chimney, no draft, or no cleanout. In such cases, the following unit prices will apply:

Install two story stainless steel liner: Price: $1000

Install three story stainless steel liner: Price: $1100

Install 2-story stainless steel 4” liner for gas hot water tank only: Price $1000

**C. Hot water tank**

Install a 40 gallon gas hot water tank, conventional: Price: $1200

Note: The only time we will be installing a hot water tank is when we are replacing a boiler that has a summer/winter hook up.

Install a 40-gallon gas hot water tank, sidewall vented: Unit must have an energy factor of .63 and must be suitable for sidewall venting using PVC pipe. Install approved vent system and connect unit to electrical power. Acceptable models include Bradford White model number M-1-TW-40S and others that meet the given standard.

Price $1,800

Install indirect hot water tank: Price $1600

Add circulator or zone valve for indirect hot water tank Price: $150

Add zone controller (if needed) for indirect hot water tank Price: $150

**D. Additional Repairs**

* Install round duct (up to 8” round); seal all joints w/ mastic, per linear foot, Price $13.00
* Install rectangular trunk line (minimum size 12x8); seal all joints, per linear foot, Price $17.00
* Replace how. or steam supply or return piping, per linear ft., <1 ¼”, Price: $19.00
* Replace how. or steam supply or return piping, per linear ft., >\_1 ¼”, Price: $19.80
* Remove leaking radiator and cap lines, Price: $165.00
* Install register, Price $60.00
* Install main steam vent, Price $135.00
* Install radiator vent, steam, Price $42.00
* Install radiator vent, hot water, Price $24.00
* Install gas pipe, per linear foot, Price $13.00
* Remove old octopus and ducts, Price $320.00
* Install bladder style expansion tank, Price $150.00
* Install a duct run to second floor (includes register), Price $320.00
* Install a duct run to third floor (includes register), Price $360.00
* Install dedicated circuit for heater (including breaker, switch, box, and plate), Price: $150.00
* Install used radiator, 550.00
* Removal of oversized/ steel boiler: Price must be negotiated

**E. Oil Tank**

1. Remove Oil tank EACH 1000.00. If property is changing over to a Different fuel, remove fill lines, copper line, In addition, close all openings with material to Match existing wall. Remove fill and vent inside an outside cement holes.

2. Install Oil Tank 275 Gallons EACH 2500.00

a. Install new 275-gallon oil tank complete with gauge vent shut off

b. Install a complete oil filter

c. Removal of old tank required

d. Filler cap should be installed as needed

e. Replace copper line to burner if necessary

f. Replace fill pipe if necessary

g. Cut and weld new oil tank

h. All fittings on the oil line are required to be flare

I. All vent piping must be pipe dropped

j. Remove oil and reinstall to new tank

k. All parts included

Oil Gauge for Oil Tank EACH 150.00

Complete Oil Filter EACH 200.00

Shut off for Oil Tank EACH 250.00

Oil Line LN FT EACH 10.00

Oil Nozzle EACH 90.00

Oil Filter Insert EACH 75.00

Fill Pipe Sizes

1 ½” LN FT EACH 24.00

2” LN FT EACH 27.00

2 ½” LN FT EACH 28.50

3” LN FT EACH 30.50

Install Baseboard Heat, Copper LN FT EACH 34.00

a. Install new hydronic ¾’ copper fin tube baseboard heat unit

b. New unit to include covers and hangers to include tying into existing system and all return piping at unit

Install Baseboard Heat, Cast Iron LN FT EACH 65.00

a. Install new hydronic cast iron baseboard heat unit

b. Installation to include tying existing system and return piping at unit. Length of unit to meet heating demand of room

c. Include fittings and up to one foot of piping on either side of radiator

6. Replace Heat Mains LN FT EACH 60.00

a. Condensate return lines, 1 ¼ in diameter minimum. L. copper

b. Replace broken or missing feed and return lines to boiler

**F. Additional Repairs**

1. Electric Feed EACH 620.00

Provide and install a new electric, Water feed to steam boiler (Included in \*604 & \*605)

2. Aquastat EACH 450.00

Replace aquastat on boiler, Including well for same with Necessary wiring

3. Triple Acting Aquastat Relay EACH 410.00

4. Pressure Temperature Gauge EACH 190.00

5. Fan/Limit Control EACH 260.00

Replace fan/limit control and wire same

6. Switching Relay EACH 118.00

7. Thermostat EACH 125.00, Install new thermostat of sufficient voltage, Include new wiring if needed

8. Set Back Thermostat Digital EACH 185.00

9. Replace Fan Control Board NEGOTIABLE

10. Combination Gas Valve 24V EACH 250.00

11. Millivolt Gas Valve EACH 250.00

12. Pilot Burner Assembly EACH 150.00

13. Thermocouple EACH 90.00

14. Millivolt Power Generator EACH 150.00

15. 24 Volt Transformer EACH 130.00

16. Pulley Drive Blower Motor and Belt EACH 210.00

17. Variable Speed Direct Drive Blower Motor EACH 300.00

18. Barometric Damper EACH 69.00

19. Clean Chimney EACH 190.00, Clean chimney to remove soot from stack, use power vacuum, Replace or repair clean-out where needed

20. Fan Center Control EACH 190.00

21. 100 AMP/Service EACH: 1450.00

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| **Hot Water Boiler Install** |
| 90% AFUE gas-fired | $6,550 |
| 95% AFUE gas-fired | $7,285 |
| Mid-efficiency Gas-fired, 82%(w/bypass) | $4,300 |
| Oil-fired, cast iron, energy star | $4,850 |
| **Steam Boiler Install** |
| Gas fired | $5,250 |
| Oil fired | $5,900 |
| **Furnace Install** |
| 92-95% AFUE furnace (includes condensate pump, two pipe system, external filter rack if needed, filter slot must have coverAdd return boot or plenum w/ external filter rackAdd up to 6 ft of vertical return drop plus new return boot or return plenum(filter slot must have cover) | $4,200$175$300 |
| Gas furnace, 80% efficiency (includes external filter rack (if needed, filter slot must have cover) | $3,025 |
| Oil fired (must be energy star rated) | $4,100 |
| Additional BTU’s, over 120,000 per 50,000 BTUInstall used radiator | $290$550 |
| **Stainless Steel Chimney Liner** |
| 2-Story | $1,000 |
| 3-Story | $1,100 |
| 4” liner for gas hwh only | $1,000 |
| **40 Gallon hot water tank** |
| Conventional | $1,200 |
| Sidewall-vented | $1,800 |
| Indirect hot water tank (Circulator or zone valve, add 150 Zone valve, add 150) | $1,600 |
| **Misc. Items** |
| Install complete Cold Air Return | $500.00 |
| Round duct (to 8''), per linear foot | $13.00 |
| Trunk line, 12x8 min, per linear foot | $17.00 |
| H.W / Steam piping < 1 1/4" | $19.00 |
| H.W / Steam piping > 1 1/4" | $19.80 |
| Remove radiator and cap risers | $165.00 |
| Install supply or return register | $60.00 |
| Main steam vent | $135.00 |
| Rad. vent, Steam | $42.00 |
| Rad. vent, H.W. | $24.00 |
| Gas pipe, per linear ft | $13.00 |
| Remove Octopus | $320.00 |
| Expansion tank | $150.00 |
| Duct run to 2nd Fl (includes register)Duct run to 3rd FL (includes register) | $320.00$360.00 |
| Install dedicated circuit, including 15 amp breaker | $150.00 |

 |

**Appendix A: Checklists**

ENERGY COORDINATI NG AGENCY

**106 West Clearfield Street Philadelphia, PA 19133**

LIHEAP CRISIS HEATER REPAIR PROJECT - HEATER INSPECTION CHECKLIST

NAME OF CLIENT\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PHONE: (\_\_\_\_) \_\_\_\_\_\_ - \_\_\_\_\_\_

ADDRESS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CONTRACTOR\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| 1. **All Installations:**
2. Old equipment has been removed from worksite
3. Heater is placed on 4” blocks Service switch and outlet near heater
4. Chimney liner, if billed for, has been completed
5. Stickers on heater
6. **Warm air furnace Installation:**
7. Cold air return had been sealed
8. Supply transition and any new supply duct has been sealed
9. The appropriate linear feet of duct work has been billed for
10. Newly installed cold air return must have external filter rack
11. **Oil Installations:**
12. A new oil filter installed or filter cartridge replaced
13. Oil line is free of leaks
14. **Hot water boiler installations:**
15. Isolation valves installed on supply and return piping
16. Pressure relief valve has extension pipe
17. Backflow preventer has extension pipe
18. **Steam Installations**:
19. An automatic water feeder has been installed
20. If any return line was replaced, did the contractor bill for the linear feet of pipe.
21. Pressure relief valve has extension pipe
 | Check the appropriate answer belowYES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_YES\_\_\_\_ NO\_\_\_\_ |
| 1. **Efficiency test results:**

Draft test:\_\_\_\_\_\_ Room temp: \_\_\_\_\_\_\_\_ Gross Stack temp:\_\_\_\_\_\_\_ Net stack temp:\_\_\_\_\_\_\_Carbon dioxide:\_\_\_\_% Oxygen:\_\_\_\_\_\_\_% Steady state efficiency:\_\_\_\_\_\_\_\_%CO ppm Smoke test (oil only) 0 1 2 3 4 5 6 7 8 9 |
| **Job Evaluation: APPROVED\_\_\_\_\_ NEEDS CORRECTIONS****Comments:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Client Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Inspector Signature:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****Date:\_\_\_\_/\_\_\_\_\_\_/\_\_\_\_\_\_** |

ENERGY COORDINATING AGENCY

HEATER REPAIR PROJECT

HEATING SYSTEM INSTALLATION CHECKLIST

1. Client's Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Address: Street: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Zip:\_\_\_\_\_\_\_\_\_\_\_\_

Phone: (\_\_\_\_) \_\_\_\_\_\_ - \_\_\_\_\_\_\_

1. Equipment Installed:
2. Gas\_\_\_\_\_\_\_ Forced air\_\_\_\_ Hot Water\_\_\_\_ Steam\_\_\_\_\_
3. Oil\_\_\_\_\_\_\_\_ Hot Water\_\_\_\_
4. Manufacturer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Model Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. BTU input: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. AFUE Rating from Manufacturers spec sheet: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Type of Venting used: Atmospheric \_\_\_\_\_\_ Condensing \_\_\_\_\_\_\_\_ Induced Draft \_\_\_\_\_\_

Chimney Conditions: Lined\_\_\_\_\_ Unlined\_\_\_\_\_\_\_

Exterior wall\_\_\_\_\_\_\_\_ Interior wall\_\_\_\_\_\_\_\_\_\_

*Please show homeowner location of external air filter rack and how to change air filter*

1. Air filter size installed: \_\_\_\_\_x\_\_\_\_\_\_
2. Efficiency test results:

Draft in flue: \_\_\_\_\_\_\_ inches water column

Carbon Monoxide: \_\_\_\_\_ppm (Must be below 100 ppm as measured in breech).

Carbon dioxide / Oxygen (circle one) \_\_\_\_\_\_\_\_

Stack Temperature \_\_\_\_\_\_\_\_

Room Temperature \_\_\_\_\_\_\_\_\_

 Net Stack temperature \_\_\_\_\_\_\_\_\_\_

Oil Only: circle smoke number: 0 12 3 4 5 6 7 8 9

Efficiency (Steady State) \_\_\_\_\_\_\_\_\_% Time\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Technicians Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_