



### **Measures and Installation Criteria**

The Combined Residential Application determines program eligibility for incentives based on household income. Households identified as Tier 1, are considered low-income households and are eligible to receive incentives through EmPower New York. Tier 3 households are considered moderate income households and are eligible to receive incentives through Assisted Home Performance with ENERGY STAR.

All measures must be installed per program guidelines and BPI standards. Participating Contractors must install measures to manufacturers specifications and measures must meet the minimum efficiency requirements and SIR requirements indicated in the eligible measures list found in Section 5.15 of the Program Manual.

## **Advanced Power Strips**

- NYSERDA will subsidize up to two advanced power strips that need to provide one
  primary outlet and at least three standby outlets with at least 1,000 joules of surge
  protection, program encourages using advance poser strips with the highest joule rating
  available.
  - a. TRM Tier 1 are standard primary-controlled advanced power strips where the primary device controls the secondary outlets.
  - b. TRM Tier 2 For AV equipment only (home theater components, gaming consoles, computers) These advanced power strips reduce active and standby energy waste by monitoring user engagement and cutting power to all devices when a set period of inactivity is detected. This is accomplished through the use of infrared sensing and motion sensing technology, in addition to the primary/ secondary switched capability of a TRM Tier 1 advanced power strip.

### **Appliances**

Refrigerator and Freezer Replacement-Evaluate for Tier 1 and Tier 3, Direct Install only available for Tier 1 Projects

### Criteria for replacement

- a. Pre-existing refrigerator must be at least ten years old.
- b. For Tier 1 projects coordinating with a weatherization agency, WAP criteria for replacement may be followed.
- c. Household agrees to give up the old appliance in exchange for the new one.
- d. For renters, the owner of the appliance must complete a Rental Property Energy Efficiency Services Agreement.
- e. Circuit must be safe.
- f. The appliance is under a rent-to-own contract and most of the payments are still outstanding (SIR requirements are waived)
- g. Side-by-side refrigerators and bottom freezer units may only be installed in households where access issues are present, such as wheelchair bound individuals who have difficulty reaching upper compartments of





appliances.

h. For Tier 1 projects, ice makers and water taps are not funded. In situations where they exist, please notify the household that they will not be provided. Please note the presence of active ice makers or water taps on the appliance application. Also note whether there is a water line to the current appliance and whether the line has a shut-off valve.

## 2. Evaluation of appliance energy use

a. The primary tool for calculating appliance energy usage can be found at:

https://www.energystar.gov/products/appliances/refrigerators/flip-your-fridge. In addition this tool is built into EmPCalc Versions 8 and later.

b. Units kept in unheated areas such as garages or porches are unsuitable for replacement. Such locations must be noted on data collection forms. Please note that installation of new refrigerators and freezers into unconditioned spaces may void the product warrantee.

#### 3. Procedures

- a. The Participating Contractor must evaluate all refrigerators and freezers on premises.
- b. The Participating Contractor must look for opportunities to:
  - i. Downsize appliance
  - ii. Unplug and remove a second appliance instead of replacing it
  - iii. Replace two appliances with one larger refrigerator.
- c. The Participating Contractor must evaluate the location of the refrigerator in relation to the following: stove and other heat sources; heating system ducts and radiators; freezer on sun porch; etc. The Participating Contractor must consider opportunities to relocate the refrigerator to a more appropriate location, if available and discuss this with the household.
- d. The Participating Contractor must identify the appropriate appliance size for the family. As a general rule, a similar size as the current refrigerator is to be installed. Size may be determined in the following ways:
  - i. Use of www.kouba-cavallo.com/refmods.htm.
  - ii. Sticker on door/nameplate
  - iii. Size is sometimes a part of the model number
- e. Complete the entire Appliance Exchange Agreement found in Section 8 of the <a href="Program Manual">Program Manual</a>.
  - To determine cubic feet, measure in inches and multiply the length, width and depth of the freezer and refrigerator section interiors. Add the two totals and divide this number by 1728.
  - ii. Contractor must measure the space available for appliance installation





and verify that recommended appliance will fit in terms of height, width and depth. It is important that care be taken to check the back of the cavity, because sometimes kitchen counters or walls may be irregular in dimension, and narrower in the back. Be sure to measure the depth and consider any obstacles that would interfere with the door opening all the way.

- iii. Contractor must check egress to ensure that appliance can be safely installed and note any obstacles for delivery. Issues regarding ingress/egress must be noted.
- iv. All relevant refrigerator data must be completed. Regardless of whether an appliance is recommended for replacement, an Appliance Exchange Application must be completed and submitted to the program.
- v. The Participating Contractor must review the Appliance Exchange Agreement with household and confirm measurements, ingress/egress concerns, proposed replacement size, and other data.

Please be sure to instruct the appliance owner, if the program approves a replacement appliance, it is their responsibility to complete and send in the warranty cards.

## **Carbon Monoxide Detectors**

- In dwellings served in which the customer is the owner of the dwelling, which
  have either a combustion appliance or attached garage, the Participating Contractor
  must ensure that a working CO detector is present. Household must be instructed in
  its use and be provided with instruction manual and warranty information. CO
  detectors that are provided by the Participating Contractor must meet the following
  criteria:
  - a. Comply with UL-2034
  - b. Employ an electro-chemical sensor
  - c. Be powered by a lithium battery
  - d. Conform to all local codes

### **Domestic Hot Water Measures**

### **Hot Water Heating**

- 1. Temperature adjustment
  - a. Criteria
    - i. Tested hot water temperature is greater than 120 degrees
    - ii. The household is amenable to temperature change
    - iii. For rental units, owner permission to perform minor measures, such as changing the hot water temperature, must be obtained.
    - iv. Whenever possible, the household member participating in the audit should be present, shown how to make the adjustments and





encouraged to perform the adjustment themselves.

- b. Procedures for electric hot water heaters
  - i. The Participating Contractor must first ensure that the circuit breaker to the water heater has been turned off.
  - ii. If the electric heater contains two heating elements, both heating elements must be adjusted.
  - iii. The Participating Contractor must ensure that the circuit breaker to the water heater has been turned back on after the adjustments have been completed.
- c. Procedures for natural gas/propane hot water heaters
  - i. Temperature settings are typically not identified on the dial. The Participating Contractor must turn down the dial an estimated amount based on the original reading and teach the household member how to make further adjustments if necessary. It is helpful to mark the original setting with a marker to guide further adjustments.
  - ii. During the energy audit, the Participating Contractor must inspect the water heater and evaluate draft considerations, such as size of flue, lining of chimney, and additional length of pipe required if relocation is necessary. If The Participating Contractor is uncertain about technical aspects of retrofit decisions, The Participating Contractor should notify program implementation staff that further evaluation by a heating professional is necessary.
  - iii. CAZ and gas leak testing must be completed as required by BPI.
    - Gas or oil hot water heating systems must meet venting codes of the National Fire Protection Association (NFPA) as applicable:
      - 1) NFPA 54: The National Fuel Gas Code
      - 2) NFPA 31: Standard for the Installation of Oil-Burning Equipment
      - 3) NFPA211: Standard for Chimneys, Fireplaces, Vents, and Solid-Fuel Burning Appliances.

## **Pipe Wrap**

- 1. Criteria- For electric hot water heaters only
  - a. A water heater change-out is not under consideration
  - b. Pipes are not currently insulated or are insulated poorly
  - c. No pipe leaks exist
  - d. If the water heater has heat traps, insulation of the intake pipe is not required.
  - e. Pipes are not part of a tankless system.

### 2. Procedures

All installed pipe insulation should be of a size that is correct for the pipe:
 i.e., no exposed pipe due to using pipe insulation that is too small. Corners must be mitered, and insulation secured with tape.





- b. First 6 feet of hot water pipe and 3 feet of intake water pipe must be insulated.
- c. Pipe insulation must be at least R3.

# **Showerhead Replacement**

#### 1. Criteria

- a. Pre-existing showerhead has a flow rate greater than 3 gallons per minute (GPM)
- b. Current showerhead is not required for medical reasons
- c. Showerhead may be installed without damaging the plumbing.
- d. Showerhead to be installed is acceptable to household

#### Procedures

- a. The participating contractor must test the water flow if the existing shower head does not have water GPM listed on the fixture. New shower head must be installed per manufacturer specifications.
- b. Shower-massager or hand-shower models are acceptable but install type must be discussed with the customer before installation.
- c. The new showerhead must have a flow rate in the range of 1.7-2.5 GPM.

## **Heat Pump Water Heater/Electric Water Heater Conversions**

### 1. Criteria:

- a. Only heat pump water heater (HPWH) and electric resistance domestic hot water equipment will be incentivized. Fossil fuel water heaters are not eligible for incentives except in instances where there are health and safety reasons where a mobile home rated, or power vented natural gas/propane water heater is the only viable option. It is recommended that electric resistance heaters only be used in those cases when a HPWH cannot be installed, and the existing water heater is non-functioning.
- b. Household must be homeowner unless a Rental Property Energy Efficiency Services Agreement is completed.
- c. Heat pump water heaters should be installed in unconditioned spaces and in accordance with manufacturers recommendations.
- d. The existing panel box must have sufficient capacity to meet the households needs in addition to the replacement electric hot water heater
- e. Please see Section 5.10 and 5.15 in the <u>Program Manual</u> for additional information on heat pump equipment installation requirements.

## 2. Procedures

a. The Participating Contractor must discuss option with the household and verify their interest in converting to electric. The household must be informed that in a "fuel-switch" scenario, the electricity costs will increase, but the new water heater will decrease the cost of the existing fuel type.





# Inspection and Service to Water Heaters Fueled by a Fossil Fuel

## 1. Criteria:

- a. Unless a health and safety issue, incentives are not available for the replacement of water heaters fueled by natural gas, oil or propane. Program will incentivize heat pump water heaters (HPWH) and electric resistance domestic hot water equipment. It is recommended that electric resistance heaters only be used in those cases when a HPWH cannot be installed, and the existing water heater is non-functioning.
- b. Replacement or repair is the only option to ensure that dwelling meets CAZ testing requirements. Prior to making this recommendation, contractor must first explore lower-cost alternatives.
- c. Conditions in dwelling are appropriate for change-out. (i.e., no flooding in basement, adequate space etc.)

#### 2. Procedures:

- a. Contractor must perform combustion efficiency and safety tests and safetychecks on all gas, propane or oil-fired water heaters as required by BPI.
- b. Contractor shall consider options to reduce usage and ensure the health and safety of the occupants. These retrofits may include, but are not limited to:
  - i. Cleaning of burner assembly
  - ii. Repair or replacement of faulty venting system
  - iii. Repair of leaking hot water lines
  - iv. Repair or replacement of faulty fuel lines.

## **Heating Equipment Measures**

### **Heating System Repair and Replacement**

### 1. Criteria for installation:

- a. For Tier 1 households, heating system replacements will only be considered as a last resort in situations in which Participating Contractor has documented attempts to obtain assistance from the Heating System Repair and Replacement (HERR) Program, the Weatherization Assistance Program, and other appropriate funding sources have been rejected. Please see Section 5.9, 5.10, and 5.15 of the Program Manual for additional information on heating system replacement requirements.
- b. Air Source Heat Pumps are prequalified measures for Tier 1 and Tier 3 projects when replacing propane, oil, kerosene, electric resistance, and wood fueled equipment. Air source heat pump must pass cost effectiveness when used for replacing natural gas heating equipment.





- Ground source heat pumps must pass cost effectiveness regardless of existing fuel type. See Sections 5.10 and 5.15 of the <a href="Program Manual">Program Manual</a> for addition information on heat pump equipment.
- c. Pellet Stoves are eligible for incentives for Tier 1 and Tier 3 households. Please refer to Section 5.8 of the <a href="Program Manual">Program Manual</a> for additional information.
- d. Unless in a no-heat situation, fossil fuel heating systems, inclusive of propane, heating oil, and kerosene, are not eligible for incentives through the program.
- e. Natural gas furnaces must have electric savings from ECM motors included in the work scope, be 96% efficient, and replace a furnace that is 80% efficient or less.
  - i. Mobile Homes may use 95% mobile home rated furnaces.
- f. Ownership by household has been established and written owner permission has been obtained.
- g. If the household is a tenant, and the building owner is not eligible for Tier 1 incentives, major heating system repairs or replacement is the responsibility of the landlord/building owner and will not be considered for Tier 1 incentives.

### 2. General Procedures:

- a. All work performed must comply with all State and local codes and must be completed in accordance with BPI standards, manufactures recommendations, and program requirements. Any new heating system equipment installed must comply with the National Fire Protection Agency (NFPA), the National Fuel Gas Code (NFGC) and York State Building construction codes.
- b. Contractor must discuss the heating system operation with an appropriatehousehold member to:
  - i. Identify problems and concerns expressed by the household
  - ii. Educate the household on appropriate use and maintenance of theheating system.
- b. Adjustments to the heating system that are deemed to be cost effective may be part of the inspection/servicing. Such measures may include replacement of a furnace filter, opening of restricted ductwork, bleeding an air-bound radiator, or adjustment of a gas burner.
- c. Furnace filter slots must be covered. A magnetic tape strip or garagedoor-type rubber gasket, secured with screws, may be acceptable options if they provide a reasonably tight seal.
- d. Contractor may not proceed with home performance measures in a home unless the heating system is deemed to be in safe and operable condition.
- e. Major repairs or replacement must be submitted to program





- implementation staff for prior approval. Program implementation staff may obtain second bids from alternative contractors.
- f. Upon completion of any heating system work which affects the efficiency of theheating system, another steady-state efficiency test must be performed. Final documentation, descriptions of specific repairs completed, and specific costs must be provided along with invoices.
- g. Warranty, instruction manual and Contractor contact information must be provided to the household.
- 3. Procedures related to Clean and Tunes on Tier 1 projects:
  - a. A Clean and Tune can be proposed when any of the following occur:
    - There is any evidence of smoke in a natural gas system's flue gas; or
    - A smoke reading of #1 or greater in an oil system's flue gas; or
    - CO levels are greater than 400 ppm or above manufacturer's allowablelimits in the air free flue gas: or
    - Evidence of flame roll-out in a natural gas heating system.
  - b. Technicians with the appropriate certifications performing clean and tunes must complete the Clean and Tune Checklist and Certification Form.
- 4. Procedures related to secondary heating systems must be performed in accordance with BPI standards.

## **Insulation Measures**

Participating Contractors can reference Section 5.15 of the <u>Program Manual</u> to identify what air sealing and insulation measures are prequalified and outlines the minimum efficiency requirements for each.

### Air Sealing Methodology

- 1. Criteria:
  - a. Blower door testing must be performed, when feasible, at the time of the audit and in accordance with BPI standards.
  - Participating Contractors musttest in accordance with BPI standards outlined in ANSI/BPI-1200-S-2017 "Standard Practice for Basic Analysis of Buildings".
- 2. Procedures:
  - a. During the audit, the Participating Contractor will conduct a blower door test and use pressure diagnostic techniques to identify major sources of infiltration.
  - b. The Participating Contractor will make a list of specific air sealing tasks to be performed. For Tier 1 projects, these tasks are to be based on the current hourly rates in Section 7.7 of the <a href="Program Manual">Program Manual</a>.
- 3. For Tier 1 projects only





- a. If the Participating Contractor is required to obtain prior approval:
  - The list of air sealing tasks and costs must first be submitted to program implementation staff, along with a projected goal for post air infiltration levels.
  - Program implementation staff must then select and approve specific air sealing strategies.
  - The Participating Contractor may provide up to one hour of additional air sealing without prior approval if further leaks are discovered during work.
- b. If the Participating Contractor has been given authority to determine work scopes without prior approval, the Participating Contractor may proceed with air sealing.
- c. Upon completion of work, the Participating Contractor must provide program implementation staff with list of specific air sealing tasks completed and both pre- andpost- air infiltration readings. Contractor must enter into EmPCalc the final blowerdoor number in order to ensure accurate representation of savings.
- d. If the Participating Contractor does not provide appropriate air sealing as part of the work scope, written explanations must be provided to program implementation staff.

#### Insulation

Participating Contractors can reference Section 5.15 Table 1A of the <u>Program Manual</u> for the insulation requirements for each measure. Contractors should prioritize insulating the whole home with cost effective measures over a high-cost single location measure.

### 1. Criteria:

- a. No significant structural deficiencies exist (such as leaking roof) which would impede theeffectiveness of the insulation. Such deficiencies must be corrected prior to insulation.
  - Participating Contractor should consult with program implementation staff for minor repairs and/or accessories that can be included as part of the project cost.
- b. Structure is sound enough to support the weight of the insulation and installer(s).

### 2. General Procedures:

- a. All insulation must be installed in a manner that is consistent with BPI Standards, NYSERDA program guidelines, and local codes.
- b. For shell measures installed in unfinished/open cavities, the building owner or designated representative, must attest the insulated areas will be finished within 30 days of project completion, unless Program approves to finish small areas as part of the eligible work scope or covering insulated materials sooner is required by code. Participating Contractor must inspect premises for presence of knob and tube wiring andnote location. If knob and tube





wiring is present in the attic the Participating Contractor may:

- Insulate attic but ensure that no insulation is in direct contact withknob and tube wiring.
- Propose removal of knob and tube wiring in order to fully insulate attic
  - The Participating Contractor must provide photographs of preexisting knob and tube wiring a detailed description of the remediation plan, and remediation costs to implementation staff for review.
  - 2) For Tier 1 projects, the Participating Contractor must receive authorization from program implementation staff prior to proceeding with knob and tube remediation.
- 3. Procedures specific to attic insulation:
  - a. Participating Contractor must ensure that insulation levels are sufficient to allow for anysettling that may occur in an open blow. At the time of installation, the installed insulation must be at least 1" higher than the invoiced level.
  - b. Stairway accesses to attics must receive wall insulation and stair tread high-density cellulose to ensure a complete thermal boundary. The access door must receive weatherstripping and a door sweep and must be secured to prevent air leakage.
  - c. If attic hatches exist or are installed in a dwelling, the Participating Contractor must weatherstrip and insulate the hatches **but not permanently seal**.
  - d. If a Participating Contractor creates an access to the attic that must be permanently sealed (such as access through drywall, or situations where the Participating Contractor insulates the attic through a vent), the Participating Contractor must provide pre-and post-photos of the installed insulation.
  - e. In situations where objects stored in attic impede the Participating Contractor's ability to adequately insulate attic, the Participating Contractor may require the household move objects within a given time frame.
    - For Tier 1 projects, in rare instances, such as situations in which
      the household is disabled, the Participating Contractor may
      propose a charge for moving objects to program implementation
      staff, prior to installation. In other situations, additional
      resources from outside of the program may be required.
  - f. When a floored attic exists, the Participating Contractor must remove and replace flooring in a manner that provides minimum damage, and which provides access to all areas. Broken and split boards must be replaced with a like product and fastened appropriately. If a drill-and-plug method is used, the finished plugs must be flush with existing





surfaces.

- g. In situations where the knee walls are insulated, the Participating Contractor must adequately block the thermal bypass at the attic floor/knee wall intersection.
- h. Ventilation must be installed in accordance with all applicable building codes, BPI standards, and program requirements. All openings must be sealed in a weathertight manner and must not greatly detract from the aesthetics of the structure.
- Vent openings shall be cut in such a manner as to allow maximum airflow through the vent.
- 4. Procedures specific to sidewall insulation:
  - a. Participating Contractor must make every effort to determine the presence of pre-existing insulation. Acceptable methods include:
    - Probing outside of electrical outlets but inside outlet covers with a non-conductive probe such as a plastic knitting needle.
    - Drilling holes in exterior facing walls in discrete areas such as closet walls. Any penetrations made by the Participating Contractor should be sealed following the inspection.
    - Probing gaps or holes in the interior surface of the exterior wall;
    - Consulting with the occupant;
    - Pulling, drilling, checking under siding. Any penetrations made by the Participating Contractor should be sealed following the inspection;
    - Infrared scans.
  - If pre-existing cellulose wall insulation is found and there is reason to believe that significant settling has occurred, re-insulation may be considered as follows:
    - Contractor must notify program implementation staff.
    - An infrared scan must be used to identify the extent of voids.
    - Square footage of the void space must be documented.
    - Contractor may then propose an adjusted wall price, based on higher labor cost/ft<sup>2</sup>.
    - Participating Contractor must work with implementation staff to calculate the SIR and proceed as appropriate.
  - For Tier 1 projects, if pre-existing fiberglass wall insulation is found,
     Participating Contractor must consult with program implementation staff.
     Additional insulation may only be installed with prior approval.
  - d. When insulating walls:
    - If pre-existing wall insulation is present, crew must accurately document location of added wall insulation.
       Notes and pictures regarding situation are recommended.
    - Siding must be removed in all cases and reinstalled to match the





- original condition. Damaged siding must be repaired and replaced with like material and color, as necessary and must be watertight. Only paintable caulk acceptable for sealing replaced siding.
- Drilling directly into exterior siding or drilling into the interior walls of the home is prohibited unless Participating Contractor obtains written permission from the homeowner and approval to proceed from program implementation staff. As part of the written permission, the Participating Contractor must a detailed description of the expectations for sealing the holes (i.e. plugged and 1 coat of spackle and or ready to paint.)
- 5. Procedures specific to miscellaneous insulation measures:
  - a. Insulation of floors or crawlspaces may be acceptable measures provided that these measures:
    - Are cost effective
    - Do not create the potential for freezing of pipes
      - Are consistent with an appropriate thermal boundary for the home. Floor insulation between a warm basement and a heated space above, for example, is not appropriate.
    - Address any air leakage issues with appropriate air sealing
  - b. Floor insulation must be installed in such a manner that insulation is in contact with the sub-floor, with kraft or foil face applied towards the sub-floor. A minimum R-19 must be installed.
  - Dirt-floor crawlspaces require a continuous air/moisture barrier. This may consist of plastic sheets of a minimum 4 ml thickness, overlapped at least one foot. This barrier must extend at least 10-16" up the foundation wall and sealed.
  - c. Exhaust fans that terminate into crawlspaces or attic spaces must be rerouted to the outside. Ductwork must be rigid.

## **Lighting Measures**

The following guidelines will assist Participating Contractors with the creation of reasonable lighting retrofit packages, and modeling of the associated savings. This guidance is for Direct Install, Tier 1 and Tier 3 projects.

### **LED Installation Guidelines**

- 1. Existing light bulbs must be 60 watts or greater to be eligible for replacement.
- 2. LEDs must be installed in high use areas. The installation of LEDs in low use areas such as closets, unfinished basements, attics, garages or utility rooms is not permitted.





- 3. LEDs must be rated for the light fixture, switch type, environment, etc. in accordance with the manufacturer's recommendation.
- 4. Participating Contractor must physically replace the existing lighting with LEDs during the course of completing the direct install/project work scope for Tier1 or Tier 3 projects. It is not permissible for the contractor to provide the customer with LEDs for the customer to install.
- 5. Candelabra LEDs
  - a. The chandelier must be in use for an average of three or more hours per day.
  - b. The household must be willing to accept the appearance of the bulb.
  - c. In instances where more than 20 LEDs will be installed at the project, a lighting schedule may be required per bullet 7. below.
- 6. To ensure adequate lighting, contractors must, whenever possible, replace incandescent bulbs with LEDs as indicated in the table below:

Pre-existing	Light Output	Replacement LED
Incandescent		Max
60 watts	750-1049 lumens	8 watts
75 watts	1050-1489 lumens	13 watts
100 watts	1490-2600 lumens	20 watts
150 watts	2601-2800 lumens	28 watts

7. In instances where a project includes more than 20 LEDs, Participating Contractors must submit an LED installation schedule detailing the pre and post bulb wattage, location, and burn time. Projects where more than 20 LEDs are specified may be considered eligible but will be reviewed and considered on a case by case basis. If a detailed schedule (e.g. pre/post wattage, location, burn time) has been modeled in the program software, a separate lighting schedule is not required.

# **Programmable Thermostats**

- 1. Criteria for installation:
  - a. Participant owns the home, or a Rental Property Energy Efficiency Services
    Agreement has been submitted to the program
  - b. Household displays the ability to properly understand and has a lifestyle that will effectively utilize the thermostat.
  - c. Thermostat voltage is appropriate.
  - d. Maximum one per zone
- 2. Required thermostat specifications:
  - a. In situations where home has a central air conditioning unit in use, thermostat has the capability to adjust cooling temperatures





- b. Battery back-up
- c. Large, easy to read display. In situations where household is visually impaired, Contractor must ensure that display is appropriate to household'sneeds.
- d. A minimum of a 5/2-day program schedule (full 7-day program schedule ispreferred)
- e. Programming should be easy and intuitive, and must allow adequate time for inputs
- f. Participant should be able to override program easily
- g. Thermostat should include at minimum of a full one-year warranty
- h. Installed thermostats must be compatible with existing heating system
- 3. Procedures for installation of thermostats for fossil-fuel systems:
  - a. Thermostats may be installed during initial audit visit.
  - b. Installation must include training of an appropriate family member.
  - c. Contractor contact information must be left with the household in casequestions arise.
  - d. Thermostat must be fully operational and programmed according to thefamily's needs before the Participating Contractor leaves the home.
  - e. Replaced thermostats that contain mercury must be disposed of in accordance with program guidelines.
- 4. Procedures regarding thermostats for electrically heated homes:
  - a. Programmable thermostats maybe very effective at reducing electricity costs; however, electrically heated homes often require thermostats in each room. Nevertheless, the cost may be moderated by replacing only the thermostats in the areas that are most frequently used; a set of 3 to 5 "line-voltage" thermostats in these areas maybe an appropriate and effective application. If such an opportunity arises, Participating Contractor may consult with program implementer for guidance.