

Tennessee Housing Development Agency

WAP Health and Safety Plan

POLICY SUBMITTED WITH PLAN

1.0 – GENERAL INFORMATION

Grantees are encouraged to enter additional information here that does not fit neatly in one of the other sections of this document.

- **If a sub-grantee is unsure how to handle a Health and Safety measure, the sub-grantee will contact THDA for additional guidance on a case by case basis.**
Examples of case by case guidance may include: non-visible knob and tube wiring, hazardous or non-functioning water heaters, suspected asbestos containing materials and other unique situations. THDA will offer additional guidance based on review of documentation or a site visit if needed. If THDA is unable to reach a conclusion, THDA will seek additional guidance from DOE. Health and Safety measures that are beyond the scope of the WAP may be addressed using LIHEAP Wx funds, if determined allowable by THDA.
- **Major Health and Safety Repairs: Repair costs that meet or exceed \$1,131.00.**
 - This figure is determined by 2019 Program Year DOE WAP budget cap of \$7,541 / 15%
- Examples of major health and safety repairs include, but not limited to: large areas of mold removal, structural repair, extensive roof repair, pest control, faulty wiring and major moisture issues. Repairs such as these are beyond the scope of weatherization.
- Agencies are encouraged to seek alternative funding sources to conduct major repairs. Dwelling units needing repairs that are beyond the scope of weatherization *must be deferred* until the issues are corrected.
 - If an agency is unsure how to handle a major repair health and safety issue, they will contact THDA for additional guidance.
- **Minor Health and Safety Repairs: Repair costs below \$1,131.00.**
- Examples of minor health and safety repairs include, but not limited to: minor water leak repair, electrical junction boxes and outlet repair, and small areas of mold removal. These examples may be addressed with DOE Health and Safety funds.
 - If an agency is unsure how to handle a minor repair health and safety issue, they will contact THDA for additional guidance.
- A number of resources relating to the categories listed in the 2019 Health and Safety Plan can be found at the [Tennessee Department of Health's Healthy Homes Program](#) site.
- Partial Weatherization of a unit is not allowed. Units that have health and safety issues that are beyond the scope of WAP *must be deferred*.
- Health and safety measure justification with photo documentation must be included in the client file. ***This includes all Lead Safe Practices.***

2.0 – BUDGETING

Grantees are encouraged to budget Health & Safety (H&S) costs as a separate category and, thereby, exclude such costs from the average cost per unit cost (ACPU) limitation. This separate category also allows these costs to be isolated from energy efficiency costs in program evaluations. Grantees are reminded that, if H&S costs are budgeted and reported under the program operations category rather than the H&S category, the related H&S costs must be included in the calculation of the ACPU and cost-justified through the approved energy audit.

Select which option is used below.

Separate Health and Safety Budget

Contained in Program Operations

3.0 – HEALTH AND SAFETY EXPENDITURE LIMITS

Pursuant to [10 CFR 440.16\(h\)](#), Grantees must set H&S expenditure limits for their Program, providing justification by explaining the basis for setting these limits and providing related historical experience.

Low percentages should include a statement of what other funding is being used to support H&S costs, while larger percentages will require greater justification and relevant historical support. It is possible that these limits may vary depending upon conditions found in different geographical areas. These limits must be expressed as a percentage of the ACPU. For example, if the ACPU is \$5,000, then an average expenditure of \$750 per dwelling would equal 15 percent expenditures for H&S.

15 percent is not a limit on H&S expenditures but exceeding this amount will require ample justification. These funds are to be expended by the Program in direct weatherization activities. While required as a percentage of the ACPU, if budgeted separately, the H&S costs are not calculated into the per-house limitation. DOE strongly encourages using the table below in developing justification for the requested H&S budget amount. Each H&S measure the Grantee anticipates addressing with H&S funds should be listed along with an associated cost for each measure, and by using historical data the estimated frequency that each measure is installed over the total production for the year.

It is also recommend reviewing recent budget requests, versus expenditures to see if previous budget estimates have been accurate. The resulting “Total Average H&S Cost per Unit” multiplied by the Grantee’s production estimate in the Annual File should correlate to the H&S budget amount listed in the Grantee’s state plan.

Should a Grantee request to have more than 15 percent of Program Operations used for health and safety purposes, DOE will conduct a secondary level of review. DOE strongly encourages use of this H&S template and matrix to help expedite this process

Per-Unit Average Percent: 15%

Each unit is unique and offers different challenges, there is not a specific amount per unit. The Grantee will provide each sub-grantee with the maximum amount of their funding which they can use to address eligible Health and Safety measures as defined in the Tennessee Health and Safety Plan for WAP. The Grantee will limit such expenditures to *no more than 15%* of total DOE funds allocated to program operations in the annual plan budget, although the amount used by an individual agency may be less than 15% of their funding, depending on the need of their housing stock. The Sub-Grantee will be allowed the flexibility to use their funds across the units they weatherize, provided they are also installing energy conservation measures. There will not be a specific cap on the amount of health and safety funding allowed per unit, but rather the Sub-Grantee agency may not exceed the total health and safety funding allocation for their agency as defined by the Grantee for that program year.

Tennessee housing stock includes a high incident of unvented space heaters. Per DOE policy, these unvented space heaters that serve as the primary heating source must be addressed in order for weatherization to proceed. The expense associated with replacing unvented spaced heaters, along with costs associated with complying with the requirements of this health and safety plan and the implementation of ASHRAE 62.2 -

2016 to the fullest extent possible, require Tennessee to request that a minimum of 15% of the funds available be used to address health and safety issues.

4.0 – INCIDENTAL REPAIR MEASURES

If Grantees choose to identify any H&S measures as incidental repair measures (IRMs), they must be implemented as such under the Grantee's weatherization program in all cases – meaning, they can never be applied to the H&S budget category. In order to be considered IRMs, the measure must fit the following definition and be cost justified along with the associated efficiency measure;

Incidental Repairs means those repairs necessary for the effective performance or preservation of weatherization materials. Such repairs include, but are not limited to, framing or repairing windows and doors which could not otherwise be caulked or weather-stripped and providing protective materials, such as paint, used to seal materials installed under this program. ([10 CFR 440 "Definitions"](#))

All measures included within Tennessee's 2019 Health and Safety Plan, in accordance with WPN 17-7, will be funded as health and safety measures *unless specified otherwise*. No measures included in this plan will be funded as an Incidental Repair with ties to a specific Energy Conservation Measure.

5.0 – DEFERRAL/REFERRAL POLICY

Deferral of services may be necessary if H&S issues cannot be adequately addressed according to WPN 17-06 guidance. The decision to defer work in a dwelling is difficult but necessary in some cases. This does not mean that assistance will never be available, but that work must be postponed until the problems can be resolved and/or alternative sources of help are found. If, in the judgment of the auditor, any conditions exist which may endanger the health and/or safety of the workers or occupants, the unit should be deferred until the conditions are corrected. Deferral may also be necessary where occupants are uncooperative, abusive, or threatening. Grantees must be specific in their approach and provide the process for clients to be notified in writing of the deferral and what conditions must be met for weatherization to continue. Grantees must also provide a process for the client to appeal the deferral decision to a higher level in the organization.

Grantee has developed a comprehensive written deferral/referral policy that covers both H&S, and other deferral reasons?

Yes No

Where can this deferral/referral policy be accessed?

[The Tennessee WAP Manual](#) - Chapter 5

6.0 – HAZARD IDENTIFICATION AND NOTIFICATION FORM(S)

Documentation forms must be developed that include at a minimum: the client's name and address, dates of the audit/assessment and when the client was informed of a potential H&S issue, a clear description of the problem, a statement indicating if, or when weatherization could continue, and the client(s) signature(s) indicating that they understand and have been informed of their rights and options.

Documentation Form(s) have been developed and comply with guidance?

Yes No

[The Tennessee WAP Manual](#) – Refer to templates found in chapters 18 & 19.

- Deferral Notice – Single Family
- Deferral Notice – Multi Family
- Mold and Moisture Inspection and Release Form
- Client Education Checklist
- Radon Informed Consent Form
- Repair, Renovation, and Painting Pamphlet – Client acknowledgment

7.0 – HEALTH AND SAFETY CATEGORIES

For each of the following H&S categories identified by DOE:

- Explain whether you concur with existing guidance from WPN 17-06 and how that guidance will be implemented in your Program, if you are proposing an alternative action/allowability, or if the identified category will not be addressed and will always result in deferral. Alternatives must be comprehensively explained and meet the intent of DOE guidance.
- Where an Action/Allowability or Testing is “required” or “not allowed” through WPN 17-06, Grantees must concur, or choose to defer all units where the specific category is encountered.
- “Allowable” items under WPN 17-06 leave room for Grantees to determine if the category, or testing, will be addressed and in what circumstances.
- Declare whether DOE funds or alternate funding source(s) will be used to address the particular category.
- Describe the explicit methods to remedy the specific category.
- Describe what testing protocols (if any) will be used.
- Define minimum thresholds that determine minor and major repairs
- Identify minimum documentation requirements for at-risk occupants
- Discuss what explicit steps will be taken to educate the client, if any, on the specific category if this is not explained elsewhere in the Plan. Some categories, like mold and moisture, require client education.
- Discuss how training and certification requirements will be provided for the specific category. Some categories, like Lead Based Paint, require training.
- Describe how occupant health and safety concerns and conditions will be solicited and documented

Grantees may include additional H&S categories for their particular Programs. Additional categories must include, at a minimum, all of the same data fields as the DOE-provided categories. Two additional tables have been created to utilize.

7.1 – Air Conditioning and Heating Systems

Concurrence, Alternative, or Deferral

Concurrence with Guidance Alternative Guidance Results in Deferral

Air Conditioning Unallowable Measure Heating Unallowable Measure

Funding

DOE LIHEAP State Utility Other

How do you address unsafe or non-functioning primary heating/cooling systems?

Unsafe primary heating and cooling systems must be repaired, replaced and removed, or rendered inoperable, or *deferral is required*.

“Red tagged,” inoperable, or nonexistent primary heating system may be replaced, repaired, or installed where climate conditions warrant, consistent with this guidance.

If a system has CO readings that are above acceptable levels, the sub-grantee representative must advise the occupant of the dangers and the problem must be corrected prior to any weatherization work being performed, unless the excess CO will be addressed during the work scheduled to be performed under the program.

If the customer cannot correct the problem or the agency is unable to address the problem using guidance in the [Tennessee Weatherization Field Guide](#) and within program guidelines, the unit must be deferred until further action can occur.

An attempt to cost-justify the HVAC measure must be made prior to replacing/repairing with health and safety funds.

How do you address unsafe or non-functioning secondary heating systems, Including unvented secondary space heaters?

NOTE: Replacement or installation of secondary units is not allowed.

Unsafe secondary units, including space heaters, must be repaired, removed or rendered inoperable, or deferral is required.

The sub-grantee will clean, tune, or remove secondary *unvented space heaters* if they pose a health and safety concern.

No secondary unvented heating source will be replaced using DOE funds and the secondary unit must meet DOE guidance on British Thermal Units (BTU) limitations.

Limitations are defined:

- **40,000 BTUs max:** Living space
- **10,000 BTUs max:** Bedroom
- **6,000 BTUs max:** Bathroom

Additional information can be found later in this plan within section: *Unvented Gas and Liquid Fueled Space Heaters Attachment A*

Indicate Documentation Required for At-Risk Occupants

At risk clients are defined as individuals who are under age 6, age 60 years or older, disabled, or have a specific health condition that is exacerbated by the lack of air conditioning in the home.

Acceptable documentation includes eligibility verification forms and doctor's notes regarding health condition.

Testing Protocols

Use proper sizing protocols (Manual J, State Approved sizing protocols, NEAT/MHEA outputs, etc.) based on post-weatherization housing characteristics, including installed mechanical ventilation, when installing or replacing a heating or cooling appliance.

Combustion appliances will be tested for both efficiency and safe operation of the unit.

Tennessee currently follows [BPI's 1200 – S - 2017 Combustion Appliance and Fuel Distribution System Inspection](#) protocol. Chapter 7 of the standard practices document outlines the protocol.

Carbon monoxide levels, draft, and other safety features are included in the testing protocol.

The appliances to be tested include furnaces, boilers, space heaters, gas stoves, and gas fireplaces. Gas appliances that exceed the acceptable levels for CO must be addressed. These levels and corrective actions are defined in the [Tennessee Weatherization Field Guide](#).

Make sure primary systems are present, operable, and performing correctly.

- Verify within the Weatherization Assistant audit tool to determine if the system can be installed as an energy conservation measure (ECM) prior to replacement as an H&S measure.
- Determine and document presence of “at-risk” current occupants when installing air-conditioning as a Health and Safety (H&S) measure.
- On combustion equipment, inspect chimney and flue and test for Combustion Appliance Zone (CAZ) depressurization.
- For solid fuel appliances look for visual evidence of soot on the walls, mantel or ceiling or creosote staining near the flue pipe.

Client Education

Client education, including information on the proper operation of the equipment, shall be provided.

Checks shall be made to insure that other components, like electrical wiring and chimneys, are in good condition and that no obvious building code violations or other safety hazards related to the space heating are evident.

When deferral is necessary, provide information to the client, in writing, describing conditions that must be met in order for weatherization to commence. A copy of this notification must also be placed in the client file.

- Discuss appropriate use and maintenance of units.
- Provide all paperwork and manuals for any installed equipment.
- Discuss and provide information on proper disposal of bulk fuel tanks when not removed as part of the weatherization work.
- Where combustion equipment is present, provide safety information including how to recognize depressurization.

Training

The State trains the proper use of combustion appliance testing through regular Energy Auditor, QCI, contractor, RIT, and Crew Leader training, and via technical memorandums. The State requires licensed contractors to remain up to date for all training requirements of the weatherization program.

Additional training resources:

[Tennessee Weatherization Field Guide](#) serves as an additional resource. Additional training and technical assistance may be provided on an as- needed basis.

Licensing and/or certification for HVAC installers as required by authority having jurisdiction (AHJ).

[HVAC Fundamentals](#) – training course

Additional training and technical assistance may be provided on an as- needed basis.

7.2 - Asbestos - All

What is the blower door testing policy when suspected Asbestos Containing Material (ACM) is identified?

NOTE: When friable asbestos containing materials are present, unless testing determines otherwise, take precautionary measures as if the material contains asbestos AND take all reasonable and necessary precautions not to damage suspected asbestos containing materials (ACMs). Proper respiratory equipment must be used.

BLOWER DOOR TESTING: Where blower door tests are performed, it is a best practice to perform pressurization instead of depressurization diagnostics.

DEFINITIONS:

- **Friable** - the ACM can be crumbled, pulverized, or reduced to powder by the pressure of an ordinary human hand.
- **Encapsulation** - the treatment of ACM (Asbestos Containing Material) with a material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers, as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).

7.2a – Asbestos - in siding, walls, ceilings, etc.

Concurrence, Alternative, or Deferral

Concurrence with Guidance Alternative Guidance Results in Deferral

Funding

DOE LIHEAP State Utility Other

How do you address suspected ACMs in siding, walls, or ceilings that will be disturbed through the course of weatherization work?

Major asbestos problems should be referred to the appropriate state or federal agency.

- [Tennessee Department of Environment and Conservation](#)
- [US Environmental Protection Agency](#)

Removal and reinstallation of siding: is allowed to perform energy conservation measures. *This will be included as part of the ECM cost.*

- The existence of asbestos siding that is in good condition does not prevent installing dense-pack insulation from the exterior.
- Some siding may be removed and reinstalled in order to perform the ECM, and the associated costs may be charged as part of the ECM.
- The cost of removing asbestos siding will be included in the wall installation measure as an ECM and must have a SIR of 1 or more to be justified.

NOTE: General abatement of asbestos siding or replacement with *new* siding is *not* an allowable health and safety cost. All precautions must be taken not to damage siding.

Never cut or drill suspected ACM in siding, or on floor, wall, and ceiling coverings.

Cutting or boring through asbestos siding is prohibited. Contractors must take all precautions to ensure that no inhalation of dust takes place.

Safety equipment must be worn at all times during the handling of asbestos materials.

Testing Protocols

Visually inspect exterior wall surface and subsurface, floors, walls, and ceilings for suspected ACM prior to drilling or cutting.

Auditors and contractors in Tennessee are not required to be certified asbestos testers or abatement specialists.

Asbestos Hazard Emergency Response Act of 1986 (AHERA) sample collection and testing must be conducted by a certified tester.

Client Education

Clients are informed in writing that suspected ACMs are present and what precautions will be taken to ensure the occupants' and workers' safety during weatherization.

Formally notify client in writing of results if ACM testing was performed.

- Refer clients with known asbestos issues to the [US Environmental Protection Agency](#)

When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Occupant must provide documentation that a certified professional performed the remediation before work continues.

Training and Certification Requirements

Energy Auditors, QCIs, contractors, RITs, and Crew Leaders are trained to identify possible asbestos conditions.

Training resources :

- [U.S. Environmental Protection Agency](#)
- [Tennessee Department of Environment and Conservation](#)

7.2b – Asbestos - in vermiculite				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
<p>NOTE: Vermiculite <i>removal</i> is <i>not</i> allowed using DOE health and safety funds.</p> <ul style="list-style-type: none"> • DOE funds may be used to encapsulate asbestos by an appropriately trained professional, if applicable. 				
How do you address suspected ACM's in vermiculite that will be disturbed through the course of weatherization work?				
<p>When vermiculite is present, assume it contains asbestos unless testing determines otherwise.</p> <p>BLOWER DOOR TESTING: Where blower door tests are performed, ensure it does not disturb asbestos and become airborne.</p> <ul style="list-style-type: none"> • Conduct blower door diagnostic using pressurization instead of depressurization. <p>If vermiculite is present, it will follow the same protocols as asbestos.</p>				
Testing Protocols				
<p>BLOWER DOOR TESTING: Where blower door tests are performed, ensure it does not disturb asbestos.</p> <ul style="list-style-type: none"> • Conduct blower door diagnostic using pressurization instead of depressurization. <p>Auditors and contractors in Tennessee are not required to be certified asbestos testers or abatement specialists.</p>				
Client Education				

Clients are informed regarding the possibility and hazards regarding asbestos. Clients will be instructed in writing not to disturb suspected ACM.

- Refer clients to the [US Environmental Protection Agency](#)

Additionally, clients will be informed of asbestos testing results, if testing was conducted.

When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence. Occupant must provide documentation that a certified professional performed the remediation before work continues.

Training and Certification Requirements

Energy auditors, QCIs, contractors, RITS, and Crew Leaders are trained to identify possible asbestos conditions. Weatherization workers must use proper respiratory protection while in areas containing vermiculite.

Additional training resources:

- [US Environmental Protection Agency](#)

7.2c – Asbestos - on pipes, furnaces, other small covered surfaces

Concurrence, Alternative, or Deferral

Concurrence with Guidance Alternative Guidance Results in Deferral

Funding

DOE LIHEAP State Utility Other

NOTE: Asbestos removal on *pipes, furnaces, and/or other small covered surfaces* is allowed using DOE health and safety funds.

- Subgrantees must notify the state prior to funding such actions.
- Charge only those costs directly associated with the testing, encapsulation, or removal to the H&S budget category.
- DOE funds may be used to encapsulate asbestos by an appropriately trained professional, if appropriate.
- See categories below for additional details.

How do you address suspected ACM's (e.g., pipes, furnaces, other small surfaces) that will be disturbed through the course of weatherization work?

Assume asbestos is present in suspect covering materials.

DEFINITIONS:

Friable - means the material can be crumbled, pulverized, or reduced to powder by the pressure of an ordinary human hand.

Encapsulation is defined as the treatment of ACBM (Asbestos Containing Building Material) with a material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers, as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).

NOTE: Weatherization workers may address ACMs such as asbestos tape on ductwork and HVAC systems as long as it is not observed to be in such a state of degradation-meeting the definition of friable. See above.

- The encapsulation of this type of material can be completed by using an approved duct mastic to completely cover and seal the tape where friability is no longer a concern.

BLOWER DOOR TESTING: Where blower door tests are performed, ensure it does not disturb asbestos.

- Conduct blower door diagnostic using pressurization instead of depressurization.

As stated in the above Funding category:

- DOE funds *can* be used to remove asbestos insulation as a health and safety measure if requested and approved by the State.
- The removal can only be performed by an AHERA asbestos control professional. This applies only to the removal of asbestos on *pipes, furnaces, and other small covered areas.*

Testing Protocols

Assess whether suspected ACMs are present.

AHERA sample collection and testing is allowed and must be conducted by a certified tester.

Client Education

Clients are informed regarding the possibility and hazards regarding asbestos.

Clients will be instructed in writing not to disturb suspected ACM.

- Refer clients to the [US Environmental Protection Agency](#)

Additionally, clients will be informed of asbestos testing results, if testing was conducted.

When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Occupant must provide documentation that a certified professional performed the remediation before work continues.

Training and Certification Requirements

Energy auditors, QCIs, contractors, RITs, and Crew Leaders are trained to identify possible asbestos conditions.

Additional training:

[U.S. Environmental Protection Agency](#)

7.5 – Biologicals and Unsanitary Conditions (odors, mustiness, bacteria, viruses, raw sewage, rotting wood, etc.)				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>		Results in Deferral <input type="checkbox"/>	
Unallowable Measure <input type="checkbox"/>				
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
What guidance do you provide Subgrantees for dealing with biological and/or unsanitary conditions in homes slated for weatherization?				
<p>NOTE: Remediation of conditions that <i>may lead to or promote</i> biological concerns and unsanitary conditions is allowed.</p> <ul style="list-style-type: none"> Addressing bacteria and viruses is <i>not</i> an allowable cost. <p>Deferral may be necessary in cases where a known agent is present in the home that may create a serious risk to occupants or weatherization workers. If any issues are identified that are beyond the scope of WAP, alternate funding sources will be considered if available.</p> <p>Units with severe issues identified by the energy auditor or contractor will be deferred. The sub grantee will carefully evaluate the whole house situation and make the determination if deferral is necessary.</p> <p><i>See Mold and Moisture section for more information.</i></p>				
Testing Protocols				
<p>Auditors and contractors utilize primarily sensory inspections to identify issues related to biological and unsanitary conditions. These conditions can include: moisture issues, rotten wood, and raw sewage.</p> <p>The Tennessee Weatherization Field Guide offers basic information on these types of occurrences</p>				
Client Education				

<p>Building rehabilitation is beyond the scope of the Weatherization Assistance Program. Homes that require more than minor repairs must be deferred.</p> <p>NOTE: Minor building and roof repairs will be addressed as health and safety measures.</p> <p>DOE health and safety funds may be used for allowing safe access to areas being weatherized, as necessary to protect weatherization workers. All other minor building and roof repairs will be considered an ECM/Incidental Repair if WA recommends it with a SIR or cumulative SIR of 1 or greater.</p>
<p>How do you define “minor” or allowable structure and roofing repairs, and at what point are repairs considered beyond the scope of weatherization?</p>
<p>A minor repair shall remain under the cost of \$1,131.00</p> <ul style="list-style-type: none"> Minor roof repairs include, but not limited to: patching loose or removed roofing materials, flashing near roof penetrations, etc. <p>Minor building repairs include, but are not limited to: crawlspace and attic access repair which are necessary for safe entry.</p> <p>Sub-grantees will seek prior approval from THDA if uncertain whether or not the repair is considered “minor”.</p> <p>Sub-grantees are strongly encouraged to leverage funds from outside programs to repair major structural and roofing repairs that are beyond the scope of weatherization.</p>
<p>If priority lists are used, and these repairs are designated as Incidental Repairs, at what point is a site-specific audit required?</p>
<p>N/A</p>
<p>Client Education</p>
<p>Client will be notified of structurally compromised areas when resulting in a deferral.</p> <p>When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>
<p>Training</p>
<p>Energy auditors, QCIs, contractors, RITs, and Crew Leaders receive training to identify building and roofing issues. The above weatherization roles primarily rely on visual inspections when determining structural or roofing issues.</p> <p>The following is a helpful resource to help identify common roof related issues:</p> <p>Checklist for Routine Inspection of Buildings – Kansas State Historical Society</p>

7.7 – Code Compliance		
Concurrence, Alternative, or Deferral		
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>

Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
What guidance do you provide Subgrantees for dealing with code compliance issues in homes receiving weatherization measures?				
<p>Correction of preexisting code compliance issues is not an allowable cost unless triggered by weatherization measures being installed in a specific room or area of the home.</p> <ul style="list-style-type: none"> When correction of preexisting code compliance issues is triggered and paid for with WAP funds, <i>cite specific code requirements</i> with reference to the weatherization measure(s) that triggered the code compliance issue in the client file. <p>State, local, or the authority having jurisdiction (AHJ) codes must be followed while installing weatherization measures, including health and safety measures.</p> <p>Condemned properties and properties where “red tagged” health and safety conditions exist that cannot be corrected under this guidance should be deferred.</p> <p>When correction of preexisting code compliance issues is triggered and paid for with WAP funds, cite specific code requirements with reference to the weatherization measure(s) that triggered the code compliance issue in the client file.</p>				
What specific situations commonly trigger code compliance work requirements for your network? How are they addressed?				
<p>Code compliance related to a specific weatherization measure that is being installed would not lead to deferral unless code compliance would lead to expensive rehabilitation of the home and/or available funding for such compliance is not available.</p> <p>Examples of code compliance situations beyond the scope would be the complete re-wiring of a home, or hard wiring all smoke and CO detectors, etc.</p>				
Client Education				
<p>Client will be informed in writing of observed code compliance issues when resulting in a deferral.</p> <p>When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>				
Training				

It is the responsibility of the sub-grantee to have knowledge, or ready access to, local codes in their service territory. It is encouraged each sub-grantee keep open communication with local building officials to prepare inspectors of Tennessee’s weatherization program standard work specifications.

The [Tennessee Weatherization Field Guide](#) addresses *some* code compliance scenarios.

The Contract to Provide Services found in [Tennessee’s WAP Manual](#) includes a clause that requires contractors to comply with local code. Each contractor awarded a bid on a single job must sign this document. Therefore, it is also the contractor’s responsibility to be aware of local code.

[Tennessee Building Codes](#) – State site which lists all residential and building code, including county exemptions.

7.8 – Combustion Gases				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>		Results in Deferral <input type="checkbox"/>	
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
DOE funds will be used for health and safety related issues related to the proper venting of combustion appliances, testing of combustion gases, and any resulting repair or replacement of the combustion appliance.				
Testing Protocols				

Combustion safety testing is required when combustion appliances are present. Documentation of this testing must be included in the client file.

If unsafe conditions whose remediation is necessary to perform weatherization cannot be remedied by repair or tuning, replacement of the combustion appliance is an allowable H&S measure unless prevented by other guidance herein.

- Maintain documentation justifying the replacement with a cost comparison between replacement and repair in the client file.

Replacement HVAC and Appliances: Must meet manufacturer safety guidelines and those specified in the [BPI’s 1200 Combustion Safety Standards](#) and the [Tennessee Weatherization Field Guide](#).

- Auditors will verify within the Weatherization Assistant to determine if the appliance can be justified as an ECM prior to replacement as an H&S measure.
- **NOTE:** Replacement of gas ovens/stovetops/ranges is *not allowed* under DOE health and safety funding. See section *Gas Ovens/Stovetops/Ranges*

See *Air-Conditioning and Heating Systems* section and Attachment A for more information.

Common Combustion Safety Diagnostics:

- Test naturally drafting appliances for spillage and CO during CAZ depressurization testing pre- and post-weatherization and before leaving the home on any day when work has been done that could affect draft (e.g., tightening the home, adding exhaust).
- Inspect venting of combustion appliances and confirm adequate clearances.
- Inspect for proper clearances of surrounding combustibles.
- Proper venting to the outside for combustion appliances, including gas dryers and refrigerators, furnaces, vented space heaters and water heaters is required.
- Correction of venting will be completed when testing indicates a problem.

How are crews instructed to handle problems discovered during testing, and what are the specific protocols for addressing hazards that require an immediate response?

If CO is above 9ppm and is linked to a malfunctioning combustion appliance within the living space, clients must be notified immediately and a follow up must be made in writing to the client. This information is contained in the [Tennessee Weatherization Field Guide](#).

Client Education

The client will be notified of any danger related to combustion gases as discovered.

Provide client with combustion safety and hazards information.

Training

Tennessee currently follows [BPI's 1200 – S - 2017 Combustion Appliance and Fuel Distribution System Inspection](#) Protocol.

All WAP energy auditors and QCI inspectors are trained to these standards during the certification process.

Additional information for auditors and contractors is located in the [Tennessee Weatherization Field Guide](#). Combustion analysis definitions, diagnostic procedures, and health effects of excessive CO are some of the subjects covered in the guide.

7.9 – Electrical				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
Minor electrical repairs are funded as health and safety measures.				
What guidance do you provide Subgrantees for dealing with electrical hazards, including knob & tube wiring, in homes slated for weatherization?				
Evaluate and if necessary, provide sufficient over-current protection and damming (if required) prior to insulating building components containing knob and tube wiring, as required by the AHJ.				
Electrical hazards are primarily determined through visual inspection. Auditors and weatherization contractors will check for: <ul style="list-style-type: none"> • Presence and condition of knob-and-tube wiring. • Alterations that may create an electrical hazard. Voltage drop and voltage detection testing are allowed.				
NOTE: Knob and Tube wiring will <i>not</i> be replaced using DOE health and safety funds. Replacing electrical wiring due to its age and condition may be beyond the scope of WAP. These units will be deferred if the presence of knob and tube wiring prohibits weatherization from proceeding.				
How do you define “minor” or allowable electrical repairs, and at what point are repairs considered beyond the scope of weatherization?				

<p>A minor repair shall remain under the cost of \$1,131.00</p> <p>Minor electrical repairs includes items such as installing junction boxes where electrical wires are spliced together and the installation of properly sized breakers for weatherization related measures.</p> <p>Major wiring issues and electrical problems may be beyond the scope of WAP. If it is discovered that major issues are present with the existing electrical system, the unit will be deferred. Such items could include, but is not limited to: replacement of service panels, replacement of all wiring, overloaded electrical circuits, etc.</p>
<p>If priority lists are used, and these repairs are designated as Incidental Repairs, at what point is a site-specific audit required?</p>
<p>N/A</p>
<p>Client Education</p> <p>Clients will be notified in writing of imminent dangers, hazards, and code compliance issues related to electrical systems when resulting in a deferral.</p> <p>When electrical issues are the cause of a deferral, provide information to client on over-current protection, overloading circuits, and basic electrical safety/risks.</p> <p>When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>
<p>Training</p> <p>Energy auditors, QCIs, contractors, RITs, and Crew Leaders are trained in identifying electrical hazards and the related code compliance. Guidance is available in the Tennessee Weatherization Field Guide.</p> <p>Additional training resources:</p> <ul style="list-style-type: none"> • Electrical Safety Foundation • OSHA Electrical Safety Presentation • Existing Wiring Evaluation – Old House Web <p><i>Refer to Code Compliance section for more details.</i></p>

7.10 – Formaldehyde, Volatile Organic Compounds (VOCs), Flammable Liquids, and other Air Pollutants				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>		Results in Deferral <input type="checkbox"/>	
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>

What guidance do you provide Subgrantees for dealing with formaldehyde, VOCs, flammable liquids, and other air pollutants identified in homes slated for weatherization?
<p>Removal of pollutants is allowed and is required if they pose a risk to workers. If pollutants pose a risk to workers and removal cannot be performed or is not allowed by the client, the unit must be deferred.</p> <p><i>Refer to Hazardous Materials Disposal section for more information.</i></p>
Testing Protocols
<p>Formaldehyde, VOCs and other air pollutants are discovered mainly through sensory inspection.</p> <p>Formaldehyde vapors may be slowly released by new carpets, waferboard, plywood, etc. VOCs are also emitted by some household cleaning agents. The sensory inspection will take place during all visits to the dwelling.</p> <p>During the pre-audit, the auditor will note if there will be a recommendation for remediation or deferral.</p>
Client Education
<p>Clients will be notified in writing of observed hazardous conditions and associated risks.</p> <p>Tennessee Department of Health offers information how to maintain a healthy home. It is encouraged auditors, QCIs, contractors, and so forth are familiar with this information to better guide their observations in a home.</p> <p>When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>
Training
<p>Energy auditors, QCIs, contractors, RITs, and Crew Leaders are trained to recognize potential hazards and when removal is necessary.</p> <p>The US Environmental Protection Agency offers information how to recognize and reduce effects of VOCs inside a home.</p>

7.11 – Fuel Leaks				
<i>(please indicate specific fuel type if policy differs by type)</i>				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input checked="" type="checkbox"/>		
Funding				
DOE <input type="checkbox"/>	LIHEAP <input type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
Remediation Protocols				

<p>Fuel leak remediation is not permitted under DOE Health and Safety funding.</p> <p>Test exposed gas lines for fuel leaks from utility coupling into, and throughout, the home. This is conducted through the use of a gas sniffer.</p> <p>Conduct sensory inspection on bulk fuels to determine if leaks exist.</p> <p>If a fuel leak is discovered, appropriate actions must take place.</p> <ul style="list-style-type: none"> • When a minor gas leak is found on the utility side of service, the utility service or gas company must be contacted before work may proceed. • Fuel leaks that are the responsibility of the client (vs. the utility) must be repaired before weatherizing a unit. <p>NOTE: If a fuel leak is discovered <i>after</i> weatherization is complete during post audit or quality assurance inspection, the utility service or gas company must be contacted to further test and repair the leak.</p>
<p>How do you define allowable fuel leak repairs, and at what point are repairs considered beyond the scope of weatherization?</p>
<p>All fuel leak repairs are beyond the scope of weatherization.</p>
<p>Client Education</p>
<p>Clients will be informed of any fuel leaks determined by the auditor. Potential hazards of these leaks will be explained to the client.</p> <p>A written deferral notice will be provided to the client.</p>
<p>Training</p>
<p>The State trains the proper use of combustion appliance testing through regular auditor, contractor, RIT, and Crew Leader training and via technical bulletin memorandums. The State requires licensed contractors to remain up to date for all training requirements of the weatherization program.</p> <p>Tennessee currently follows BPI's 1200 – S - 2017 Combustion Appliance and Fuel Distribution System Inspection Protocol.</p> <p>All WAP energy auditors and QCI inspectors are trained to these standards during the certification process.</p> <p>The Tennessee Weatherization Field Guide serves as an additional resource.</p>

7.12 – Gas Ovens / Stovetops / Ranges				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>

What guidance do you provide Subgrantees for addressing unsafe gas ovens/stoves/ranges in homes slated for weatherization?
<p>When CO testing indicates a problem, standard maintenance or repair of gas cooktops and ovens is allowed.</p> <p>NOTE: Replacement of gas ovens/stovetops/ranges is <i>not allowed</i> under DOE health and safety funding.</p> <p>Appliances that exceed the acceptable levels for CO and/or determined unsafe as defined in the Tennessee Weatherization Field Guide must be addressed if not deferred.</p> <p>The agency will clean, tune, and repair the appliance when appropriate and as allowed per program guidelines.</p>
Testing Protocols
<p>NOTE: Stovetop CO <i>testing</i> IS optional.</p> <p>Gas ovens will be tested for both efficiency and safe operation of the unit. The agency is allowed to perform a clean/tune/repair is allowed where appropriate.</p> <p>Both ovens and stovetops will be visually inspected for operability and flame quality.</p> <p>Gas ovens will be tested in accordance to Tennessee SWS Field Guide and BPI's 1200 Combustion Safety Standards.</p> <p>CO diagnostics must be recorded in the client file.</p>
Client Education
<p>Clients will be informed of unsafe gas ovens/stoves/ranges determined by the auditor. This includes informing clients to the importance of using exhaust ventilation when cooking and the importance of keeping burners clean to limit the production of CO.</p> <p>The auditor will explain how potential hazards associated with these appliances affect the client and the dwelling's indoor air quality.</p> <p>Additional resources:</p> <ul style="list-style-type: none">• Tennessee Department of Health offers information how to maintain a healthy home.• Prevent Fire includes resources how clients can safely operation gas ovens and stoves, reducing risk of injury.
Training

The State educates on the proper use of combustion appliance testing through regular Energy Auditor, QCI, contractor, RIT, and Crew Leader training and via technical bulletins memorandums.

The State requires licensed contractors to remain up to date for all training requirements of the weatherization program.

Auditors, QCIs, and all associated weatherization contractors may refer to the:

- [Tennessee Weatherization Field Guide](#)
- [BPI 1200 Combustion Safety Standards](#)
- [R.J. Karg Associates](#) – Protocol for gas range CO testing, *if auditor determines to perform this diagnostic.*

Additional training and technical assistance may be provided on an as- needed basis.

7.13 – Hazardous Materials Disposal				
[Lead, Refrigerant, Asbestos, Mercury (including CFLs/fluorescents), etc.]				
<i>(please indicate material where policy differs by material)</i>				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>		Results in Deferral <input type="checkbox"/>	
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
Client Education				
Inform client in writing of hazards associated with hazardous waste materials being generated and/or handled in the home.				
Training				
Auditors, contractors, RITs, and Crew Leaders receive hazardous material disposal training covering the following topics:				
<ul style="list-style-type: none"> • Tennessee Weatherization Field Guide – Chapter 1.9.6 Appropriate Personal Protective Equipment (PPE) for working with hazardous waste materials. • Disposal requirements and locations – See disposal procedures below. • Tennessee Department of Health - Risks related to hazardous materials. 				
Additional training can be found through OSHA Hazard Communication Standards				
It is also required all weatherization contractors keep all relevant Safety Data Sheets (SDS) readily available.				
Disposal Procedures and Documentation Requirements				

Hazardous Waste Materials generated in the course of weatherization work shall be disposed of according to all local laws, regulations and/or Federal guidelines, as applicable.

Document proper disposal requirements in contract language with responsible party.

Lead and Asbestos – Refer to these sections in this health and safety plan for more information on proper disposal.

Mercury Disposal – Mercury containing materials will be disposed of according to Tennessee Department of Environment and Conservation and the Tennessee Department of Health’s Communicable and Environmental Disease Services.
Such common mercury containing materials associated with weatherization include but not limited to: thermostats, lightbulbs, and batteries.

The attached links provide additional resources how to dispose of specific mercury containing materials.

- [Tennessee Department of Environment and Conservation](#)
- [Tennessee Department of Health](#)
 - [Mercury Factsheet](#)

Refrigerant Disposal – Disposal of refrigerants will comply with **EPA Regulations 40 CFR Part 82, Subpart F** under [Section 608](#) of the Clean Air Act.

7.14 – Injury Prevention of Occupants and Weatherization Workers (Measures such as repairing stairs and replacing handrails)				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
<p>NOTE: DOE funds will only be used to make minor repairs that are <i>necessary in order to effectively weatherize the home</i>.</p>				
<p>What guidance do you provide Subgrantees regarding allowable injury-related repairs (e.g., stairs, handrails, porch deck board)?</p>				

Workers must take all reasonable precautions against performing work on homes that will subject workers or occupants to health and safety risks.

Minor repairs and installation may be conducted only when necessary to effectively weatherize the home; otherwise these measures are not allowed.
Repairs necessary to allow safe access to areas necessary for weatherization may be performed using DOE health and safety funds.

The case file must document the need for the repair/replacement and its connection to the weatherization work being performed.

NOTE: Under no other circumstance will DOE health and safety funds be used to replace porches, stairs, handrails, or lighting *on the exterior of the home*.

If weatherization work cannot be completed because the lack of these safety devices, deferral may be necessary.

Clients shall be informed of these observed hazards and provided with recommendations and referral options.

How do you define “minor” or allowable injury prevention measures, and at what point are repairs considered beyond the scope of weatherization? Quantify “minor” or allowable injury prevention measures.

A minor repair shall remain under the cost of \$1,131.00

Minor repairs such as the installation of interior stairs and handrails that are necessary in order to effectively weatherize the home are allowed. Without the repair or installation, the weatherization worker would be subject to possible injury.

Training

Energy Auditors, QCIs, contractors, RITs, and Crew Leaders receive certification in [OSHA-10](#) and [OSHA-30](#).
Additional resources can be found using the [Tennessee Weatherization Field Guide](#).

7.15 – Lead Based Paint				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>

<p>DOE health and safety funds may be used to address weatherization related costs associated with working in homes where lead based paint may exist and weatherization work may disturb the paint.</p> <ul style="list-style-type: none">• Only those costs directly associated with the testing and lead safe practices for surfaces directly disturbed during weatherization activities are allowable. <p>NOTE: Deferral is required when the extent and condition of lead-based paint in the house would potentially create further health and safety hazards.</p>
Safe Work Protocols
<p>Crews must follow EPA's Lead; Renovation, Repair and Painting Program (RRP) when working in pre-1978 housing unless testing confirms the work area to be free.</p>
Testing Protocols
<p>Testing to determine the presence of lead in paint that will be disturbed by WAP measure installation is allowed with EPA-approved testing methods.</p> <ul style="list-style-type: none">• If not tested, then all work in pre-1978 units must be completed by an RRP certified contractor and Lead Safe work practices must be followed. <p>Testing methods must be economically feasible and justified.</p> <p>Job site set up and cleaning verification by a Certified Renovator is required.</p> <p>Subgrantees will keep on file verification crews are following lead safe practices through proper documentation. See Documentation category below.</p>
Client Education
<p>As required under the RRP rule, targeted clients will be provided a copy of the EPA booklet "Renovate Right – Important Lead Hazard Information for Families, Child Care Providers and Schools". This document is found in the Tennessee WAP Manual.</p> <p>When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>
Training and Certification Requirements

All Energy Auditors, QCIs, contractors, RITs, and Crew Leaders working in pre-1978 units are required to have Renovation, Repair and Painting Program (RRP) Certification training and be a certified firm.

All employees and contractors working on pre-1978 homes must receive training to install measures in a lead-safe manner in accordance with the SWS and EPA protocols.

[RRP Training Information](#)
[Tennessee Weatherization Field Guide](#)

A certified renovator must be present on jobs as required under RRP. Documentation that certification has been completed will be retained by the sub-grantee.

It will be the Contractor’s responsibility to train members of their crew.
 It will be the Contractor’s responsibility to ensure his company is a certified firm and are in full compliance with EPA’s requirements and following lead safe weatherization practices.

Documentation Requirements

The Certified Renovator must provide proof that they followed the RRP and Lead Safe procedures. They are to provide the Pre-Renovation form signed by the client and photographs to document that the procedures were followed.

Documentation in the client file must include:

- Certified Renovator certification
- Any training provided on-site;
- Description of specific actions taken;
- Lead testing and assessment documentation
- Photos of site and containment set up. Include the location of photos referenced if not in file.

7.16 – Mold and Moisture

(Including but not limited to: drainage, gutters, down spouts, extensions, flashing, sump pumps, dehumidifiers, landscape, vapor retarders, moisture barriers, etc.)

Concurrence, Alternative, or Deferral

Concurrence with Guidance Alternative Guidance Results in Deferral

Funding

DOE LIHEAP State Utility Other

<p>A major repair is one that meets or exceeds the cost of \$1,131.00</p> <p>Major drainage issues are beyond the scope of the Weatherization Assistance Program.</p> <p>Housing with conditions that may create a serious health concern requiring more than cost justified incidental repairs will be deferred.</p> <p>NOTE: Mold testing is not an allowable cost.</p>
<p>What guidance do you provide Subgrantees for dealing with moisture related issues (e.g., drainage, gutters, down spouts, moisture barriers, dehumidifiers, vapor barrier on bare earth floors) in homes slated for weatherization?</p>
<p>NOTE: Source control is the first step in solving moisture problems.</p> <p>Examples of source control repairs include:</p> <ul style="list-style-type: none">• Site drainage/run off modifications - Regrading along a foundation wall to keep water away from building.• Gutter repair or minor replacement• Down spouts repair/replacement - to reduce water pooling,• Flashing - for windows and doors to eliminate or reduce water entry,• Sump pumps - for removal of water in a basement or crawl space• Vapor barriers – to cover exposed earth in crawlspaces and cellars.• Ventilation – to remove water vapor. See Ventilation category. <p>Limited water damage repairs that can be addressed by weatherization workers and correction of moisture and mold creating conditions, including ground barriers, are allowed under Health and Safety.</p> <p>Where severe Mold and Moisture issues cannot be addressed, deferral is required.</p>
<p>How do you define “minor” or allowable moisture-related measures, and at what point is work considered beyond the scope of weatherization?</p>

A minor repair shall remain under the cost of \$1,131.00

Minor mold and moisture repairs are considered repairs that can be completed with hand tools. Foundation repair that require heavy machinery are considered outside of the scope of weatherization.

Surface preparation where weatherization measures are being installed (e.g., cleaning mold off window trim in order to apply caulk) must be charged as part of the ECM, not to the H&S budget category.

Mold Remediation Protocols:

If the area containing mold is less than 10 square feet total (about 3 ft. by 3 ft.), the job will be assigned to the weatherization contractors. Health and Safety funds will be used to alleviate moisture related issues that have the potential to promote mold growth or have a negative effect on the indoor air quality. Health and Safety funds cannot be used to remove mold greater than 10 square feet, but may be used to provide ventilation.

The job should be deferred and the client should contact professionals when:

- The mold covers more than 10 square feet;
- There is evidence of extensive water damage;
- It is suspected that the HVAC system may be contaminated, i.e. there is mold near the intake of the system. The HVAC is not to be run, as it could spread mold throughout the house;
- The water and/or mold damage was caused by sewage or other contaminated water
- There is a health concern and alleviation of the concern is beyond the scope of the WAP.

Client Education

All WAP clients are provided a mold and moisture pamphlet titled, "A Brief Guide to Mold, Moisture, and Your Home" issued by the EPA. This can be found in the [Tennessee WAP Manual](#).

[Tennessee Department of Health](#) offers additional resources concerning cleaning/maintaining drainage systems and proper landscape design.

[Department of Energy](#) also offers information on moisture control in the home.

When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.

Training

The [Tennessee Weatherization Field Guide](#) addresses preventing moisture problems.

Auditors and QCIs will include visual assessment of potential moisture concerns. Diagnostics such as moisture meters are recommended at pre - and post - audit, but not required.

The [EPA](#) offers training how to prevent and remediate mold.

[WxTV](#) offers a 14 minute episode on mold and moisture concerns

In addition, Energy Auditors, QCIs, contractors, RITs, and Crew Leaders are trained regarding moisture issues and how they can best be addressed within the program’s scope during annual technical training.

7.17 – Pests				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input type="checkbox"/>	Alternative Guidance <input checked="" type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
What guidance do you provide Subgrantees for dealing with pests and pest intrusion prevention in homes slated for weatherization?				
<p>NOTE: Pest removal is not allowed using DOE health and safety funds.</p> <ul style="list-style-type: none"> Screening of windows and points of access into <i>air sealing practices</i> is allowed to prevent pest intrusion <p>Infestation of pests may be cause for deferral where it poses health and safety concern for workers.</p>				
Define Pest Infestation Thresholds, Beyond Which Weatherization Is Deferred				
<p>Infestation of pests may be cause for deferral when it cannot be reasonably removed by the client or poses health and safety concern for workers.</p> <p>Sub-grantees will refer clients to alternative programs for assistance to the best extent possible.</p>				
Testing Protocols				
No DOE health and safety funds will be used to test for pests outside of visual inspection.				
Client Education				
<p>Clients will be informed of potential health and safety risks and notified according to the deferral standards found in the Tennessee WAP Manual.</p> <p>The Tennessee Department of Health offers additional information how to keep a home pest free.</p> <p>When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>				

Training
<p>Training regarding deferrals is addressed during annual training for Energy Auditors, QCIs, contractors, RITs, and Crew Leaders.</p> <p>The Tennessee Department of Health offers additional information how to keep a home pest free.</p> <p>US Environmental Protection Agency pest control practices.</p>

7.18 – Radon				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
NOTE: Radon mitigation is not an allowable health and safety cost.				
What guidance do you provide Subgrantees around radon?				
<p>NOTE: <i>Whenever site conditions permit</i>, exposed dirt shall be covered with a vapor barrier except for mobile homes. Mobile homes may have a vapor barrier if the home is on a permanent foundation. Otherwise, the vapor barrier will not be installed in a mobile home.</p> <p>Because radon migrates through the soil, mitigation strategies include the following:</p> <ul style="list-style-type: none"> • Installing plastic ground barrier and sealing seams. • Sealing the walls and floor of the basement. • Installing sealed sump pump covers <p>Installing ventilation and ground covers/vapor barriers are allowable Health and Safety expenses.</p>				
Testing Protocols				
If known radon issues are above an acceptable level (4 pCi/l) the unit will be deferred.				
Client Education				

The client will be provided with the EPA’s Citizen’s Guide to Radon. Confirmation that this guide was received and discussed with the client must be retained in the case file.

- This guide will be found in the [Tennessee WAP Manual](#) or [EPA’s Publications about Radon](#)

NOTE: All clients must sign the Radon Informed Consent Form.

The form explains results from the Indoor Air Quality Study show there is a small risk of increasing radon levels when building tightness is improved. The form also includes a list of precautionary measures WAP may install based on EPA Healthy Indoor Environment Protocols;

In conjunction with this consent form, the client must receive education on the benefits of weatherization including energy savings, energy cost savings, improved home comfort, and increased safety.

[Radon Zone Map](#)

Training and Certification Requirements

Radon is addressed in the Tennessee Weatherization Field Guide and through auditor and contractor training. Additional training on radon can be found at:

- [Tennessee Department of Health](#)
- [US Environmental Protection Agency](#)

Documentation Requirements

If the unit is tested for radon, the test results must be included in the client file.

7.19 – Safety Devices: Smoke and Carbon Monoxide Alarms, Fire Extinguishers				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input checked="" type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
What is your policy for installation or replacement of the following:				
Smoke Alarms: There must be an operable smoke alarm in every bedroom and at least one in the common space on every floor of the unit. Smoke alarms may be installed where not present or are inoperable.				
Carbon Monoxide Alarms: All units are required to have an operable Carbon Monoxide Alarm.				
Fire Extinguishers: Providing fire extinguishers is an allowable using DOE health and safety funds when solid fuel is present.				
Testing Protocols				
Auditors and QCIs shall test smoke and carbon monoxide alarms to ensure they are operable.				
Client Education				

<p>Clients are instructed regarding installation of smoke detectors and carbon monoxide detectors if applicable.</p> <p>Client education materials can also be found in the Training category.</p>
Training
<p>Energy Auditors, QCIs, contractors, RITs, and Crew Leaders receive instruction on where to install smoke/CO alarms and compliance with local codes.</p> <p>Training resources include:</p> <p>NFPA Smoke Alarms NFPA Carbon Monoxide Alarms NFPA Fire Extinguishers</p> <p>The Tennessee Weatherization Field Guide provides additional information.</p>

7.20 – Occupant Health and Safety Concerns and Conditions				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
What guidance do you provide Subgrantees for soliciting the occupants’ health and safety concerns related to components of their homes?				
<p>When a person’s health may be at risk and/or WAP work activities could constitute a health and safety hazard, the occupant will be required to take appropriate action based on severity of risk.</p> <p>Failure or the inability to take appropriate actions must result in deferral.</p> <p>Subgrantees shall seek knowledge of outside funding and programs for services to help address occupant health and safety concerns and conditions. The client will be referred to these programs if applicable.</p>				
What guidance do you provide Subgrantees for determining whether occupants suffer from health conditions that may be negatively affected by the act of weatherizing their home?				
<p>Screen occupants to reveal known or suspected health concerns either as part of the initial application for weatherization, during the audit, or both.</p> <ul style="list-style-type: none"> • NOTE: The intent is not to solicit specific medical conditions that clients may have, but to inform the client of how certain aspects of weatherizing the client’s home may affect them if they have certain medical conditions. 				
What guidance do you provide Subgrantees for dealing with potential health concerns when they are identified?				

Client Education
<p>Provide client with information on function, use, and maintenance (including location of service switch and cleaning instructions) of ventilation system and components.</p> <p>Provide client with equipment manuals for installed equipment. Include disclaimer that ASHRAE 62.2 does not account for high polluting sources or guarantee indoor air quality.</p>
Training
<p>Energy Auditors, QICs, contractors, RITs, and Crew Leaders receive ASHRAE 62.2-2016 training which includes proper sizing, and the evaluation of existing and new systems.</p> <p>Additional training resources:</p> <p>ASHRAE 62.2-2016 – read only version DOE WAP Health and Safety FAQ – Pages 26 through 35 provide descriptive answers to a number of ventilation questions.</p>

7.22 – Window and Door Replacement, Window Guards				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>	Results in Deferral <input type="checkbox"/>		
Funding				
DOE <input type="checkbox"/>	LIHEAP <input type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
NOTE: Replacement, repair, or installation is not an allowable H&S cost.				
What guidance do you provide to Subgrantees regarding window and door replacement and window guards?				
<p>DOE funds will not be used for replacement or repair of windows, doors or window guards under the health and safety category.</p> <ul style="list-style-type: none"> Window and door replacement or repair will be determined by the energy audit tool either as an energy conservation measure or meet the definition of an incidental repair. <p>Deferral may be necessary if windows or doors are in such a state of disrepair that they would prevent weatherization. When deferral is necessary, provide information in writing describing conditions that must be met in order for weatherization to commence.</p>				
Testing Protocols				
N/A				
Client Education				
Provide written information on lead risks wherever issues are identified.				
Training				

Sub grantees have been informed through a memorandum that window and door replacement is not allowed under health and safety.

Lead Safe [RRP](#) contractors must be used if windows and doors are being replaced as ECMs in pre-1978 homes.

7.23 – Worker Safety (OSHA, etc.)				
Concurrence, Alternative, or Deferral				
Concurrence with Guidance <input checked="" type="checkbox"/>	Alternative Guidance <input type="checkbox"/>		Results in Deferral <input type="checkbox"/>	
Funding				
DOE <input checked="" type="checkbox"/>	LIHEAP <input type="checkbox"/>	State <input type="checkbox"/>	Utility <input type="checkbox"/>	Other <input type="checkbox"/>
How do you verify safe work practices? What is your policy for in-progress monitoring?				
<p>Workers must follow OSHA standards where required and take precautions to ensure the health and safety of themselves and other workers.</p> <p>All Subgrantees and contractors must maintain compliance with the current OSHA Hazard Communication Standards, including on-site organized Safety Data Sheets (SDS) (formerly called MSDS).</p>				
Training and Certification Requirements				
<p>Energy Auditors, QCIs, contractors, RITs, and Crew Leaders receive training on the use and importance of PPE and safety training appropriate for job requirements.</p> <p>Training resources include:</p> <p>Tennessee Weatherization Field Guide OSHA-10 OSHA Hazard Communication Standards</p>				

**WAP WPN 17-7 Attachment A:
Additional Health and Safety Guidance Related to Heating Systems**

- Budget Category Decisions
- Code Compliance and Inspection
- Electric Space Heaters
- Fireplaces – Special Considerations
- Manufactured Homes – Special Considerations
- Masonry Chimneys
- Solid Fuel-Fired Heaters
- Unvented Gas- and Liquid-Fueled Space Heaters
- Vented Gas- and Liquid-Fueled Space Heaters

Budget Category Decisions: Perform a full DOE-approved energy audit prior to deciding how to categorize the cost of space heater repair or replacement. If the measure is an approved WAP expenditure and the audit justifies the costs with an SIR equal to or greater than 1.0, the measure must be performed and costs charged as an Energy Conservation Measure (ECM). If the measure is not an eligible ECM, the measure may be charged as either a Health and Safety (H&S) measure if included in the DOE approved Grantee Annual Health and Safety Plan. More information is available in the DOE Health and Safety Guidance and Incidental Repair Guidance to assist with this decision.

Code Compliance and Inspection Requirements: Installation of space heaters requires knowledge of appropriate industry standards and comply with the applicable building code(s) in the municipality where installation is taking place. Building permits shall be secured, where required for all space heater work. This is a program operations cost. The manufacturer approved initial start-up procedures must be followed before any heater is put into operation. States are reminded that even licensed heating contractors may not be aware of the stringent requirements of the Weatherization Program, so their work should be reviewed by Program staff. Safety inspections related to the space heater should include, but not be limited to, a check for adequate floor protection, and code-compliant clearances to walls and other combustible materials. Even though many vented space heaters are manufactured with spill switches, it is still a requirement that a worst-case depressurization draft test be performed on all vented units.

Electric Space Heaters: DOE will not permit any DOE-funded weatherization work other than minor repairs on electric space heaters. This does not preclude the use of other funding sources for the replacement or major repair of electric space heaters, but the Department does not encourage it because of:

- Lower output ratings (size);
- Risk of fire hazards; and,
- Inadequate electrical systems in older homes, which frequently cannot safely carry the power required to operate an electric heater.

Work on such systems may make local agencies liable for inadequate electric wiring and any damages that result.

Fireplaces – Special Considerations: Fireplaces present special hazards that are affected by weatherization. If draft is poor, smoke may downdraft into the living space causing poor indoor air quality. It is likely the occupants will ventilate in these situations. Near the end of a wood fire, glowing coals will remain, radiating heat, while the draft lowers and allows the top of the chimney to cool, further reducing draft. The reduced oxygen available to the glowing coals causes production of CO without the smoke that encourages space ventilation. This is a dangerous situation as the CO enters the living space due to the lowered draft, causes drowsiness of occupants, and sometimes worse. For this reason it is extremely important to make sure there is a CO alarm installed in this combustion zone and occupants are educated to the danger signs and what to do.

Inspection/Evaluation:

Assessing solid fuel fired appliances involves inspecting the venting/chimney and the overall installation to ensure it adheres to the applicable code: NFPA 211 or other as determined by the authority having jurisdiction. Appliances should be inspected pre- and post-weatherization.

Conduct pre- and post- weatherization worst case CAZ depressurization testing in spaces having a fireplace. Since there is no consensus method for verifying safe operation of fireplaces, Grantees can propose testing policies and limits (e.g., one Grantee uses a depressurization limit of -5 in the CAZ of any wood-burning combustion appliances, including fireplaces). If the Grantee does not propose a policy and fireplaces are left operational, the vent must meet code or the home cannot be weatherized.

To evaluate operation of *other* combustion appliances, the blower door can be set to run at 300 CFM (set up as for depressurization testing), or other Grantee-approved flow, to mimic the airflow dynamics likely when the fireplace is in use.

Manufactured Homes – Special Considerations: The Manufactured Home Construction and Safety Standards (<https://portal.hud.gov/hudportal/HUD?src=/hudprograms/mhcss>) require all fuel-burning, heat-producing appliances in mobile homes, except ranges and ovens, to be vented to the outside.

All fuel-burning appliances in mobile homes, except ranges, ovens, illuminating appliances, clothes dryers, solid fuel-burning fireplaces and solid fuel-burning stoves, must be installed to provide for the complete separation of the combustion system from the interior atmosphere of the manufactured home (i.e., to draw their combustion air from outside).

Masonry Chimneys: Masonry chimneys used by vented space heaters should be properly lined in compliance with the International Fuel Gas Code (IFGC). When WAP installs new equipment it must meet local code requirements. Masonry chimneys that have been retired (i.e. not being used by existing equipment) should be assessed for energy savings opportunities such as air sealing and capping to reduce thermal bypass.

Solid-Fueled Space Heaters: Solid fueled space heaters include wood stoves, coal stoves, pellet stoves, and fireplaces. Wood, coal, and pellet fired furnace and boiler systems should be treated as vented heating systems and are not covered here.

Assess solid fuel-fired appliances to ensure safe installation prior to weatherization activities taking place. Repair or removal is an allowed H&S measure for primary and secondary solid fuel-fired heating appliances. Replacement is allowed for *primary* solid fuel heating appliances but replacement is not allowed for secondary heating appliances. Repair of flues and proper installation (e.g. protection of combustibles), is required for both primary and secondary solid fuel heating appliances. Install replacement primary heaters and/or flues according to applicable codes, standards and manufacturer's instructions. Provide adequate combustion air.

Unvented Gas- and Liquid-Fueled Space Heaters: This policy applies to unvented space heaters fueled by natural gas, propane or kerosene. This policy is consistent with the IRC and the IFGC and is divided to address primary and secondary heat sources.

Primary Heat Sources:

DOE will not permit any DOE-funded weatherization work where the completed dwelling unit is heated with an unvented gas- and/or liquid-fueled space heater as the primary heat source. The primary heat source must be replaced with a vented unit prior to weatherization. The replacement unit should be sized so it is capable of heating the entire dwelling unit, consistent with audit requirements described in [10 CFR 440.21\(e\)\(2\)](#).

Secondary Heat Sources:

Secondary unvented units that conform to the safety standards of ANSI Z21.11.2 may remain as back-up heat sources. DOE is allowing this flexibility primarily to provide low-income clients an emergency back-up source of heat in the event of electrical power outages. When selecting items to leave behind, give preference to code-compliant units that do not require electricity.

Secondary unvented units that do not meet ANSI Z21.11.2 must be removed and properly disposed of prior to weatherization but may remain until a replacement heating system is in place. Repair of secondary unvented units is not allowed. Secondary unvented units that meet the ANSI Z21.11.2, but are not operating safely, must be removed and properly disposed of.

An unvented gas- and liquid-fueled space heaters that remains in a completed single-family house after weatherization shall:

- Not have an input rating in excess of 40,000 Btu/hour;
- Not be located in, or obtain combustion air from sleeping rooms, bathrooms, toilet rooms, or storage closets, except:
 - One listed wall-mounted space heater in a bathroom if permitted by the authority having jurisdiction which --:
 - Has an input rating that does not exceed 6,000 Btu/hour;

- Is equipped with an oxygen-depletion sensing safety shut-off system; and
- The bathroom has adequate combustion air;
- One listed wall-mounted space heater in a bedroom if permitted by the authority having jurisdiction, which --:
 - Has an input rating that does not exceed 10,000 Btu/hour;
 - Is equipped with an oxygen-depletion sensing safety shut-off system; and
 - The bedroom has adequate combustion air.

Vented Gas- and Liquid-Fueled Space Heaters: Treat vented gas- and liquid-fueled space heaters the same as furnaces in terms of combustion safety testing, repair and replacement. This policy applies to vented space heaters fueled by natural gas, propane, or oil.