

## **Health and Safety – 2015 DOE State Plan**

### **NORTH DAKOTA WEATHERIZATION ASSISTANCE PROGRAM HEALTH AND SAFETY STANDARDS**

In addition to the weatherization of low income housing, funds provided under 40.18(c)(15) may be used to remedy health and safety hazards, which are necessary before, or because of, the installation of weatherization materials. The work performed by local agencies involves interaction with all aspects of the operation of homes by installers, auditors and inspectors. The health and safety of clients, local agency staff and subcontractors is a primary concern of the Division of Community Services (DOC). It is of great importance, therefore, that agency staff maintain awareness of the potential hazards associated with the weatherization process. These standards provide only general guidelines for health and safety concerns. Detailed specifications regarding the health and safety of workers in the construction industry can be found in Construction Industry OSHA Safety and Health Standards (29 CFR 1926/1910) which is available from the U.S. Department of Labor. These Standards are applicable to all workers providing services using funding under the North Dakota WAP program. Chapter XVII, subpart C, item 1926.20 of the OSHA standards states that: "no contractor or subcontractor for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety." In addition when there is a conflict between OSHA requirements, or the State Mechanical Code or City Code and these health and safety regulations, the other codes and/or requirements shall take precedence.

At the time of the audit a Health and Safety assessment will be performed. If the cost of the needed Health and Safety measures needed on the home exceeds the allowed cost per unit of \$1033, the unit may be deferred. If a Health and Safety issues prevents a measure from being completed, the unit must be deferred.

#### **Health and Safety Training**

All training is listed in the Training and Technical Assistance section of the State Plan document.

##### **1. Definitions:**

- a. **Health and Safety Measures:** Those measures necessary to eliminate hazards within a structure, that are either caused by the weatherization process or which by their remedy, allow for the installation of weatherization materials while ensuring that the structure is left in a safe condition.
- b. **Weatherization Measures:** Building shell and equipment measures determined to be cost-effective by the North Dakota Weatherization Field Standards.
- c. **Weatherization Materials:** Those materials listed in Appendix A of the DOE WAP for Low-Income Persons Final Rule, 10 CFR Part 440. Materials for incidental repairs do not have to be listed in Appendix A, but should be at least equal to or better than industry standard practices.
- d. **Incidental Repairs:** Repairs necessary for the effective performance or preservation of weatherization materials. These repairs may not be charged to Health and Safety, but must be factored into the SIR calculation of the measures they affect.
- e. **Lead Safe Weatherization (LSW):** LSW is a set of protocols to be used when disturbing surfaces that may have lead-based paint that will reduce and control the amount of lead dust and paint chips that are generated.

## **2. Expenditure Limits and Reporting - Health and Safety Measures:**

- a. The State's Health and Safety costs will not exceed 9.4 percent of the total annual Federal formula allocation. These costs must be recorded and tracked separately in the accounts and on the house audit/assessment form and reported as a separate line item on the Invoice Voucher. If the average cost per unit is \$7105.00 the average H&S expenditure per unit could be up to \$1033 or 14.6%. This reflects a higher cost per unit because of LSW practices, RRP costs, increased ventilation costs due to complying with ASHRAE 62.2, and replacing water heaters and furnaces with Health and Safety issues.
- b. The 9.4% figure was derived by using the actual percentage of H&S expenditures incurred by our current DOE grant. Health and Safety expenditures are tracked by the State reporting system and during the monitoring process. (See Health and Safety Measures table 2015 attachment)

## **3. Incidental Repairs:**

- a. Only Health and Safety measures will be paid for out of budgeted Health and Safety funds. Incidental Repairs will be run under the measures that they apply to and included in those measures SIR calculation

## **4. Existing Client Health Problems:**

- a. At the time of the audit the auditor will ascertain from the clients any existing health problems that the clients have. This information will be required on the application for the Weatherization Assistance Program. This will be documented on the Health and Safety Inspection form (SFN 59494) and steps that are taken to ensure Weatherization work will not worsen the health concerns will be documented on the work order.

## **Mold and Other Hazards Form:**

The sub grantee will use the Health and Safety Inspection form (SFN 59494) to document any potential health and safety issue, what will be done, and the responsibility of all parties involved and the clients signatures and dates that they understand and have been informed of their rights and options.

## **Health and Safety Issues:**

### **Heating Systems, Water Heaters, Other Appliances, Combustion Gases, Solid Fuel Heating, Space Heaters, Smoke and Carbon Monoxide Detectors:**

Procedures for Action/Allowability/Limits, Testing, and Client Education are addressed in the North Dakota Standard Work Specifications and Field Guide. Actions not listed below must have State approval. Installations, repairs and replacements may be paid for with Health and Safety funds.

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#### **1. 2230 Client Health and Safety**

- a. Weatherization services must be provided in a manner that minimizes risk to clients.
- b. Dwellings with unvented or vent-free combustion appliances, with the exception of gas ranges, may not be weatherized until such appliances are properly vented (according to the appropriate code) to the outdoors.
- c. Building owners and clients must be notified of any health or safety problems that require weatherization work to be terminated. The state's Health and Safety Inspection form must be signed by the agency and building owner, the form must be included in the job file.
- d. It is preferred that sub grantees minimize or restrict the use of materials that may be hazardous to the client, however if the subgrantee must utilize hazardous chemicals, it must be discussed with the client prior their use.
- e. Special precautions must be taken if the occupant of the home has respiratory ailments, allergies, is pregnant, or has unique health concerns. Sub grantees should try and protect all clients from respirable particles, such as paint or insulation dust, during the weatherization process.
- f. The installation of hazardous materials must be done in well-ventilated areas.
- g. If strong smelling chemicals, such as formaldehyde, are detected in the client's home, sub grantees should not perform any weatherization measures that would reduce the natural air leakage of the dwelling.
- h. At minimum, auditors and crew members should inform property owners of safety problems, code problems and other health and safety issues. For problems that are life-threatening or otherwise serious, the subgrantee supervisor should contact the jurisdiction having responsibility for the observed problem.

<b>Health and Safety Issue</b>	<b>Action/Allowability</b>	<b>Testing</b>	<b>Client Education</b>	<b>Training</b>
<b>Air Conditioning and Heating Systems</b>	"Red tagged" or inoperable heating system replacement, repair, or installation is allowed.	Make sure systems are present, operable, and performing. Determine presence of at-risk occupants.	Discuss and provide information on appropriate use and maintenance of units and proper disposal of bulk fuel tanks when not removed.	Awareness of guidance. Conducting diagnostic and SWS requirements training
<b>Appliances and Water Heaters</b>	Replacement of water heaters is allowed on a case by case basis. Replacement and installation of other appliances are not allowable health and safety costs. Repair and cleaning are allowed. Also see Air Conditioning and Heating Systems and Combustion Gases.	Determine whether appliances/water heaters are performing safely. Combustion safety testing is required when combustion appliances are present.	Discuss and provide information on appropriate use, maintenance, and disposal of appliances/water heaters.	Awareness of guidance. Conducting diagnostic training.
<b>Asbestos - in siding, walls, ceilings, etc</b>	Removal of siding is allowed to perform energy conservation measures. All precautions must be taken not to damage siding. Asbestos siding should never be cut or drilled. Recommended, where possible, to insulate through home interior.	Inspect exterior wall surface and subsurface for asbestos siding prior to drilling or cutting.	Inform the client that suspected asbestos siding is present and how precautions will be taken.	Safe practices for siding removal and replacement. How to identify asbestos containing materials.
<b>Asbestos - in vermiculite</b>	When vermiculite is present, unless testing determines otherwise, take precautionary measures as if it contains asbestos. Blower door testing is allowed if determination has been made that no danger exists from depressurization. Encapsulation by an appropriately trained asbestos control professional is allowed. Removal is not allowed.	Assess whether vermiculite is present. Asbestos Hazard Emergency Response Act of 1986 (AHERA) certified prescriptive sampling is allowed by a certified tester.	Clients should be instructed not to disturb suspected asbestos containing material. Provide asbestos safety information to the client. Formally notify client if test results are positive for asbestos and signed by the client.	Audit training on how to recognize vermiculite.
<b>Asbestos - on pipes, furnaces, other small covered surfaces</b>	Assume asbestos is present in covering materials. Encapsulation is allowed by an AHERA asbestos control professional and should be conducted prior to blower door testing. Removal may be allowed by an AHERA asbestos control professional on a case by case basis with approval by the state.	AHERA testing is allowed by a certified tester.	Clients should be instructed not to disturb suspected asbestos containing material. Provide asbestos safety information to the client.	How to identify asbestos containing materials.
<b>Health and Safety Issue</b>	<b>Action/Allowability</b>	<b>Testing</b>	<b>Client Education</b>	<b>Training</b>
<b>Biologicals and Unsanitary Conditions - odors, mustiness, bacteria, viruses, raw sewage, rotting wood, etc.</b>	Remediation of conditions that may lead to or promote biological concerns and unsanitary conditions is allowed. Addressing bacteria and viruses is not an allowable cost. 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. Also see Mold and Moisture guidance below.	Sensory inspection.	Inform client of observed conditions. Provide information on how to maintain a sanitary home and steps to correct deferral conditions.	How to recognize conditions and when to defer. Worker safety when coming in contact these conditions.
<b>Building Structure and Roofing</b>	Building rehabilitation is beyond the scope of the Weatherization Assistance Program. Homes with conditions that require more than incidental repair should be deferred. See Mold and Moisture guidance below.	Visual inspection. Ensure that access to areas necessary for weatherization is safe for entry and performance of assessment, work, and inspection.	Notify client of structurally compromised areas.	How to identify structural and roofing issues.
<b>Code Compliance</b>	Correction of preexisting code compliance issues is not an allowable cost other than where weatherization measures are being conducted. State and local (or jurisdiction having authority) codes must be followed while installing weatherization measures. Condemned properties and properties where "red tagged" health and safety conditions exist that cannot be corrected under this guidance should be deferred.	Visual inspection. Local code enforcement inspections.	Inform client of observed code compliance issues.	How to determine what code compliance may be required.
<b>Combustion Gases</b>	Proper venting to the outside for combustion appliances, including gas dryers is required. Correction of venting is allowed when testing indicates a problem.	Combustion safety testing is required when combustion appliances that are not sealed combustion are present. Inspect venting of combustion appliances and confirm adequate clearances. Test naturally drafting appliances for draft and spillage under worst case conditions before and after air tightening. Inspect cooking burners for operability and flame quality. Testing documentation must be kept in the client file.	Provide client with combustion safety and hazards information, including the importance of using exhaust ventilation when cooking and the importance of keeping burners clean to limit the production of CO.	How to perform appropriate testing, determine when a building is excessively depressurized, and the difference between air free and as-measured.

Health and Safety Issue	Action/Allowability	Testing	Client Education	Training
<b>Drainage - gutters, down spouts, extensions, flashing, sump pumps, landscape, etc.</b>	Major drainage issues are beyond the scope of the Weatherization Assistance Program. Homes with conditions that may create a serious health concern that require more than incidental repair should be deferred. Small repairs may be done to preserve weatherization measures. See Mold and Moisture	Visual inspection. See guidance below.	Importance of cleaning and maintaining drainage systems. Information on proper landscape design.	How to recognize drainage issues.
<b>Electrical, other than Knob-and-Tube Wiring</b>	Minor electrical repairs are allowed where health or safety of the occupant is at risk. Upgrades and repairs are allowed when necessary to perform specific weatherization measures.	Visual inspection. Voltage drop and voltage detection testing are allowed.	Provide information on overloading circuits, electrical safety/risks.	How to identify electrical hazards. Local code compliance.
<b>Electrical, Knob-and-Tube Wiring</b>	Minor upgrades and repairs necessary for weatherization measures and where the health or safety of the occupant is at risk are allowed.	Inspect for presence and condition of knob-and-tube wiring. Check for alterations that may create an electrical hazard. Voltage drop and voltage detection testing are allowed.	Provide information to client on over-current protection, overloading circuits, basic electrical safety/risks.	How to identify electrical hazards. Local code compliance.
<b>Fire Hazards</b>	Correction of fire hazards is allowed when necessary to safely perform weatherization.	Check for fire hazards in the home during the audit and while performing weatherization.	Inform client of observed hazards.	How to identify fire hazards.
<b>Formaldehyde, Volatile Organic Compounds (VOCs), and other Air Pollutants</b>	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.	Sensory inspection.	Inform client of observed condition and associated risks. Provide client written materials on safety and proper disposal of household pollutants.	How to recognize potential hazards and when removal is necessary.
<b>Injury Prevention of Occupants and Weatherization Workers - Measures such as repairing stairs and replacing handrails.</b>	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.	Observe if dangers are present that would prevent weatherization.	Inform client of observed hazards and associated risks.	Awareness of potential hazards.
<b>Health and Safety Issue</b>	<b>Action/Allowability</b>	<b>Testing</b>	<b>Client Education</b>	<b>Training</b>
<b>Lead Based Paint</b>	Follow EPA's Lead: Renovation, Repair and Painting Program (RRP). In addition to RRP, Weatherization requires all weatherization crews working in pre-1978 housing to be trained in Lead Safe Weatherization (LSW). Deferral is required when the extent and condition of lead-based paint in the house would potentially create further health and safety hazards.	Testing is allowed. Job site set up and cleaning verification is required by a Certified Renovator.	Follow RRP requirements.	All weatherization crews working on pre-1978 homes must receive LSW training and be accompanied by an EPA Certified Renovator. Grantee Monitors/Inspectors must be Certified Renovators and receive LSW training.
<b>Mold and Moisture</b>	Limited water damage repairs that can be addressed by weatherization workers and correction of moisture and mold creating conditions are allowed when necessary in order to weatherize the home and to ensure the long term stability and durability of the measures. Where severe Mold and Moisture issues cannot be addressed, deferral is required.	Visual assessment is required. Mold testing is not an allowable cost. Documentation must be in client file.	Provide client notification and disclaimer on mold and moisture awareness.	National curriculum on mold and moisture or equivalent.
<b>Occupant Preexisting or Potential Health Conditions</b>	When a person's health may be at risk and/or the work activities could constitute a health or safety hazard, the occupant at risk will be required to take appropriate action based on severity of risk. Temporary relocation of at-risk occupants may be allowed on a case by case basis. Failure or the inability to take appropriate actions must result in deferral.	Require occupant to reveal known or suspected health concerns as part of initial application for weatherization. Screen occupants again during audit. Documentation must be in client file.	Provide client information of any known risks. Provide worker contact information so client can inform of any issues.	How to assess occupant preexisting conditions and determining what action to take if the home is not deferred. Awareness of potential hazards.
<b>Occupational Safety and Health Administration (OSHA) and Crew Safety</b>	Workers must follow OSHA standards and Safety Data Sheets (SDS) and take precautions to ensure the health and safety of themselves and other workers. SDS must be posted or available at the jobsite wherever workers may be exposed to hazardous materials.	Grantees must perform assessments to determine if crews are utilizing safe work practices.	Not applicable.	Use and importance of personal protection equipment. OSHA 10 hour training is required for all workers. Hazard Communication (SDS) training is also required for all workers.
<b>Health and Safety Issue</b>	<b>Action/Allowability</b>	<b>Testing</b>	<b>Client Education</b>	<b>Training</b>
<b>Pests</b>	Pest removal is allowed only where infestation would prevent weatherization. Infestation of pests may be cause for deferral where it cannot be reasonably removed or poses health and safety concern for workers. Screening of windows and points of access is allowed to prevent intrusion.	Assessment of presence and degree of infestation and risk to worker.	Inform client of observed condition and associated risks.	How to assess presence and degree of infestation, associated risks, and need for deferral.

<b>Radon</b>	Whenever site conditions permit, exposed dirt must be covered with a vapor barrier except for mobile homes. In homes where radon may be present, precautions should be taken to reduce the likelihood of making radon issues worse.	Testing may be allowed in locations with high radon potential.	Provide client with EPA consumer's guide to radon. A check off on the Hazards form will document this.	What is it, how it occurs. What factors may make radon worse. Weatherization measures that may be helpful. Vapor barrier installation.
<b>Smoke, Carbon Monoxide Detectors, and Fire Extinguishers</b>	Installation of smoke/CO detectors is allowed where detectors are not present or are inoperable. Replacement of operable smoke/CO detectors is not an allowable cost.	Check for operation.	Provide client with information on use of smoke/CO detectors and fire extinguishers where allowed.	Where to install detectors. Local code compliance. ASHRAE 62.2 2013
<b>Solid Fuel Heating (Wood Stoves, etc.)</b>	Maintenance, repair, and replacement of primary indoor heating units is allowed where occupant health and safety is a concern. Maintenance and repair of secondary heating units is allowed.	Required inspection of chimney and flue and combustion appliance zone depressurization.	Provide safety information including recognize depressurization.	How to perform CAZ depressurization test and proper inspection.
<b>Space Heaters, Stand Alone Electric</b>	Repair, replacement, or installation is not allowed. Removal is recommended.	Check circuitry to ensure adequate power supply for existing space heaters.	Inform client of hazards and collect a signed waiver if removal is not allowed.	Awareness of guidance.
<b>Space Heaters, Unvented Combustion</b>	Removal is required. Units that do not meet ANSI Z21.11.2 must be removed prior to weatherization but may remain until a replacement heating system is in place. If a client will not allow removal, the unit must be deferred.	Testing for air-free carbon monoxide (CO) is allowed. Check units for ANSI Z21.11.2 label.	Inform client of dangers of unvented space heaters - CO, moisture, NO2, CO can be dangerous even if CO alarm does not sound.	How to perform air-free CO testing. Understanding the dangers of unvented space heaters.
<b>Health and Safety Issue</b>	<b>Action/Allowability</b>	<b>Testing</b>	<b>Client Education</b>	<b>Training</b>
<b>Space Heaters, Vented Combustion</b>	Should be treated as furnaces.	Venting should be tested consistent with furnaces.	Not applicable.	Proper testing methods for safe operation (draft and CO) should be conducted and for steady state efficiency if possible.
<b>Spray Polyurethane Foam (SPF)</b>	Use EPA recommendations (available online at <a href="http://www.epa.gov/dfe/pubs/projects/spf/spray_polyurethane_foam.html">http://www.epa.gov/dfe/pubs/projects/spf/spray_polyurethane_foam.html</a> ) when working within the conditioned space or when SPF fumes become evident within the conditioned space. When working outside the building envelope, isolate the area where foam will be applied, take precautions so that fumes will not transfer to inside conditioned space, and exhaust fumes outside the home.	Check for penetrations in the building envelope. Sensory inspection inside the home for fumes during foam application.	Provide notification to the client of plans to use two-part foam and the precautions that may be necessary.	Training on use of various products with specification for each application type. SDS sheets. Temperature sensitivity.
<b>Ventilation</b>	ASHRAE 62.2 2013 is required to be met to the fullest extent possible, when performing weatherization activity. We have been given a variance on section 6.5.2 to use our duct leakage standards. We also have been given an exception to section 6.4 to use our Worst Case Draft Test in place of the requirements of this section. We also are implementing all addendums to the Standard.	ASHRAE 62.2 evaluation, fan flow, and follow up testing are required to ensure compliance.	Provide client with information on function, use, and maintenance of ventilation system and components. Include disclaimer that ASHRAE 62.2 does not account for high polluting sources or guarantee indoor air quality.	ASHRAE 62.2 training required including proper sizing, evaluation of existing and new systems, depressurization tightness limits, critical air zones, etc.
<b>Window and Door Replacement, Window Guards</b>	Replacement, repair, or installation is not an allowable health and safety cost but may be allowed as an efficiency measure if cost justified.	Not applicable	Provide information on lead risks.	Awareness of guidance.