

WEATHERIZATION PROGRAM NOTICE: 02-5
EFFECTIVE DATE: July 12, 2002
REPLACES WPN 93-13A ISSUED SEPTEMBER 30,

1994

SUBJECT: Health and Safety Guidance

PURPOSE: To provide grantees with guidance in addressing hazards and remediation they should consider, at a minimum, when developing their health and safety plans and procedures. This guidance is also provided to the Regional Offices to assist them with their review of grantee health and safety plans. The information in this guidance as well as many additional health and safety resources related to Weatherization are available on the Internet at www.waptac.org.

SCOPE: The provisions of this guidance apply to all grantees applying for financial assistance under the Department of Energy (DOE) Weatherization Assistance Program (Weatherization).

BACKGROUND: This Program Notice replaces Weatherization Program Notice 93-13A, Interim Health and Safety Guidance of December 29, 1993, modified September 30, 1994. To assist DOE in revising the guidance, a Health and Safety Committee was formed (consisting of at least two representatives from each of the Regions) to review current trends and practices for the important health and safety concerns of the network.

This Program Notice will assist states in their development of a comprehensive approach to health and safety matters. All states must amend their Health and Safety Plans in their master files of their grant application for the next grant's application cycle, Program Year 2003.

Some noteworthy changes:

- Requirement for a five part State Health and Safety Plan
- Identification of ten broad areas of Potential Hazard Consideration that must be addressed in the state application where applicable to the State's Weatherization Assistance Program
- New Deferral Standards

Over the years, a number of issues have been addressed to ensure that weatherization activities do not cause or exacerbate health and safety problems for workers and clients. These issues include, but are

not limited to, wood stoves, knob-and-tube wiring, carbon monoxide and space heaters, and, more recently, lead paint. The following DOE memoranda and Weatherization Program Notices have been issued to address these topics and are attached to this program notice.

- Attachment 1 -- An August 4, 1988, memorandum, "Approval To Include Wood Stoves as a Weatherization Assistance Program Material," addressed the health and safety concerns as well as the audit requirements for including wood burning stoves as an approved measure.
- Attachment 2 -- An October 21, 1988, memorandum, "Knob-and-Tube Wiring: Revised Policy Superseding Guidance of 7/25/83 and 7/13/88," addressed the possible adverse effects on fire safety of insulating dwelling units that contain knob-and-tube wiring.
- Attachment 3 -- Excerpts from a June 5, 2000, study on insulating homes containing knob-and-tube wiring presents important background information, addresses National Electrical Code compliance issues, and provides insight into current practices.
- Attachment 4 -- A March 18, 1992, memorandum, "Weatherization Assistance Program (WAP) Space Heater Policy," set forth the requirements to be met, by fuel type, to incorporate space heaters as an allowable weatherization measure.
- Attachment 5 -- Weatherization Program Notice 02-6, July 12, 2002, "Weatherization Activities and Federal Lead-based Paint Regulations," provides guidance to Regional Offices and states on weatherization health and safety matters associated with lead-based paint in homes.

I. RULE REQUIREMENTS

Health and safety is addressed in three sections of the program regulations: 1) Minimum program requirements (§440.16); 2) Allowable expenditures (§440.18); and 3) Weatherization materials standards and energy audit procedures (§440.21).

II. GUIDANCE AND PROCEDURES

Energy-related health and safety concerns need to be remedied before, or because of, the installation of weatherization materials. Therefore, energy-related health and safety hazards associated with weatherization activities may be remedied or prevented with DOE funds. Measures and their costs must be reasonable and must not seriously impair the primary energy conservation purpose of the program.

States must include their health and safety plan in the master file section of the grant application package. Before any DOE funds can be expended for health and safety, states must provide in the master file the hazards to be remedied and anticipated approaches including training, client education,

and conditions that require referral to other agencies that, therefore, necessitate a delay of weatherization services.

States are reminded that the primary goal of the Weatherization Program is energy efficiency. States should set health and safety expenditure limits for their subgrantees. These limits are often expressed as a percentage of the average cost per dwelling unit even though health and safety costs have been removed from the average cost calculation. Budgeting and financial reporting issues relating to health and safety are described in the application and reporting package in the annual file (Section II.2.2) and the master file (Section III.4).

Although not required as a part of the hearing on the state plan, DOE strongly encourages states to address their health and safety procedures in a public hearing forum. The hearing on the state plan would offer an excellent opportunity to air these procedures, discuss how they would impact other components of the plan, and take comments from the public.

STATE HEALTH AND SAFETY PLANS: At minimum, state health and safety plans must have the following five sections:

A. Grantee Health and Safety

Funds provided under §440.18(c)(15) are to remedy health and safety hazards, which is necessary before, or because of, the installation of weatherization materials. These funds are to be expended by subgrantees in direct weatherization activities. Costs related to grantee health and safety should be charged to the state administrative or training and technical assistance cost category, as applicable. As a reminder, grantees are states or Native American tribes that receive Weatherization grants directly from DOE and subgrantees are local agencies or other entities that receive Weatherization grants from the state.

B. Crew and/or Contractor Health and Safety

Local agencies must comply with Occupational Safety and Health Administration (OSHA) requirements in all weatherization activities. Costs for local agencies to comply with OSHA requirements may be charged under §440.18 as health and safety, tools and equipment, incidental repairs, etc. The cost category selected should be charged consistently throughout the state (from agency to agency) for the same activity.

Because of the wide range of activities involved in weatherizing a house, ensuring crew health and safety requires a broad knowledge of the appropriate OSHA requirements. Some of these requirements include, but are not limited to: respirator protection, techniques for safely lifting heavy objects, electrical equipment safety, ladder safety, and general worker protection. OSHA standards should be consulted for further details. Other useful information includes Material Safety Data Sheets that identify potential health risks and describe the proper use, handling, and storage of a wide variety of materials, including

some common weatherization materials. They also suggest personal protective equipment and address first aid measures.

C. Client Health and Safety

Grantees and subgrantees are required to take all reasonable precautions against performing work on homes that will subject workers or clients to health and safety risks. Before beginning work on the residence, the agency must take into consideration the health concerns of each occupant, the condition of the dwelling, and the possible effect of work to be performed on any particular health or medical condition of the occupants. When a person's health is fragile and/or the work activities would constitute a health or safety hazard, the occupants at risk will be required to leave the home during these work activities.

Weatherization services can be provided in a manner that minimizes risk to workers and clients. Although the Weatherization Assistance Program does not provide all the solutions, awareness of potential hazards is essential to providing quality services. A list of the more common hazards and DOE's preferred approach to them are discussed in Section D. Other energy-related hazards should be considered on a case-by-case basis.

D. Potential Hazard Considerations

DOE reviews the hazards, remediation materials, and weatherization costs allowed under §440.18(c)(15). At a minimum, state health and safety plans should consider the following potential hazards. The plans should describe the approaches that agency crews and contractors will take to determine if the potential hazard should be remedied, referred to other agencies, result in partial weatherization services, or cause weatherization services not to be provided.

1. *Biologicals* – Removal of mold, odors, viruses, bacteria, unsanitary (including raw sewage) conditions, and rotting wood is not a Weatherization responsibility; however, program workers frequently encounter these conditions. DOE funds may be used if these conditions must be remedied to allow effective weatherization work and/or to assure the immediate or future health of workers and clients. Caution should be taken when selecting air tightness limits for dwellings with these problems. Since these conditions are often related to moisture, the grantee should consider establishing procedures that allow local agencies to assess moisture conditions as a part of the initial audit procedure and treat them as part of the weatherization work. If necessary, weatherization services may need to be delayed until the problem can be referred to another agency that can take remedial action.
2. *Combustion Appliances and Combustion Gases* – Devices needed to test for dangerous concentrations of combustion products in the living space may be purchased under the health and safety cost category. Grantees should develop a policy on this hazard. Such a policy should include a procedure for testing combustion appliances in all homes, but particularly before

and after air tightening. This procedure could consist of checking carbon monoxide levels in the flue/vent of vented appliances and near the exhaust of unvented appliances; examining draft-ability of flues, start-up spillage at flues, and adequacy of combustion air; and testing for fuel leaks. Combustion appliances that should be tested include furnaces, boilers, space heaters, gas fireplaces, cook stoves, and water heaters. Grantee health and safety procedures should explain in detail how the Grantee will handle problems discovered in its testing program. These details should include the methods used to determine when DOE monies will be used to remedy incidental problems and how the Grantee will treat problems that cannot be remedied with DOE monies after discovery. (*Detailed information on the treatment of wood burning stoves is discussed in Attachment 1; detailed information on space heaters is discussed in Attachment 4.*)

3. *Fire Hazards* – Combustion appliances and their associated venting systems can also present potential fire hazards. State health and safety procedures should identify inadequate clearances between combustion appliances (including venting systems) and combustible materials. States should have procedures in place to identify potentially dangerous creosote build-up in chimneys and wood stove flues. Again, these procedures should include the methods used to determine when DOE monies will be used to remedy fire hazards and how the Grantee will treat problems that cannot be remedied with DOE monies after discovery.
4. *Existing Occupant Health Problems* – Agencies should be aware that some individuals' health problems could be exacerbated by weatherization activities. For example, some clients can be sensitive to dust generated from the installation of cellulose insulation. There is also some concern that the use of blower doors could aggravate certain health problems, although the limited research conducted on this topic has not validated these concerns. Grantees should establish procedures to identify preexisting conditions (e.g., allergies) and address such problems when they are found. Those procedures should address the manner in which such problems will be identified and the steps to be taken to ensure that weatherization work will not worsen these problems.
5. *Indoor Air Quality*
 - a. *Asbestos* – General asbestos removal is not approved as a health and safety weatherization cost. Major asbestos problems should be referred to the appropriate state agency and/or the Environmental Protection Agency (EPA). Where local agencies work on large heating and distribution systems, including related piping, asbestos removal may be necessary. Removal is allowed to the extent that energy savings resulting from the measure will provide a cost-effective savings-to-investment ratio. This would normally be true with work done on large, multifamily heating systems. Where permitted by code or EPA regulations, less costly measures that fall short of asbestos removal, such as encapsulation, may be used. Removal and replacement of asbestos siding for purposes of wall cavity insulation is permissible if allowed by state and local

codes.

- b. *Radon* – Where there is a previously identified radon problem, work that would exacerbate this problem should be limited. Radon abatement is not an allowable activity under the weatherization program. However, those costs associated with taking precautions in a dwelling known to have radon problems are allowable weatherization expenditures. These costs are allowable if an energy audit indicates that weatherization techniques would help in radon remediation. While Grantees should establish sound radon-related strategies, major radon problems should be referred to the appropriate local environmental organization or agency for mitigation or abatement.
 - c. *Formaldehyde and Volatile Organic Compounds (VOCs)* – Formaldehyde vapors may be slowly released by some new carpets, waferboard, plywood, etc. VOCs are also emitted by some household cleaning agents. Caution should be taken when selecting air tightness limits in dwellings with VOC problems.
6. *Lead Paint* – Weatherization Program Notice 02-6, “Weatherization Activities and Federal Lead-Based Paint Regulations,” (*Attachment 5*) provides guidance to Regional Offices and states on weatherization health and safety matters associated with lead-based paint in homes. Precautions that need to be taken (referred to in the Program Notice as Lead Safe Weatherization) may be charged as a weatherization activity.
7. *Building Structure* – Building rehabilitation is beyond the scope of the Weatherization Assistance Program; however, program workers frequently encounter homes in poor structural condition. Dwellings whose structural integrity is in question should be referred to the Department of Housing and Urban Development. Weatherization services may need to be delayed until the dwelling can be made safe for crews and occupants (*see Section E. Deferral Standards*). Incidental repairs necessary for the effective performance or preservation of weatherization materials are allowed. Examples of these limited repairs include sealing minor roof leaks to preserve new attic insulation and repairing water-damaged flooring as part of replacing a water heater.
8. *Electrical Issues* – The two primary energy-related health and safety electrical concerns are insulating homes that contain knob-and-tube wiring and identifying overloaded electrical circuits. Older electric wiring, primarily knob-and-tube wiring, located in a wall cavity or exposed on an attic floor was intended by code to have free air movement for that would cool the wire when it is carrying an electric current. Laboratory tests have shown that retrofitting thermal insulation around electric wiring can cause it to overheat, resulting in a fire hazard. The October 21, 1988, Weatherization policy guidance on knob-and-tube remains in effect. The policy places responsibility on the states to ensure that insulation around knob-and-tube wiring conforms with applicable codes in jurisdictions where the work is being performed.

In 1987, Section 324 (article 324-4) of the National Electrical Code (NEC) was revised to

prohibit the use of concealed knob-and-tube wiring “in the hollow spaces of walls, ceilings and attics when such spaces are insulated by loose or rolled insulating material.” Since 1987, NEC added a prohibition against “foamed in-place” insulation as well. While the NEC is a national code, it is not administered and enforced nationally. Building codes are administered on the state, county, or local level but are usually based on one of the national model codes (e.g., BOCA, CABO, UBC), which reference the NEC for electrical requirements. State or local jurisdictions can amend the model code they have adopted to meet specific local concerns. For example, Washington, Oregon, and two local jurisdictions in Ohio amended NEC 324-4 to allow loose or rolled thermal insulation in spaces containing knob-and-tube wiring providing specific conditions are met. (*For more on DOE’s Knob-and-Tube guidance, see Attachments 2 and 3.*)

Serious electrical hazards exist when gross overloads are present. Should auditors and crews find such existing problems, they should notify the owner. Weatherization measures that involve the installation of new equipment such as air conditioners, heat pumps, or electric water heaters can exacerbate previously marginal overload problems to hazardous levels. The problem should also be noted in the client file. To the extent that these problems prevent adequate weatherization, the agency should consider repairing them on a case-by-case basis.

9. *Refrigerant Issues* – The replacement of air conditioners, approved since 1992, and the recently approved refrigerator replacements (Weatherization Program Notice 00-05) requires agencies to reclaim refrigerant per Clean Air Act 1990, section 608, as amended by 40 CFR 82, 5/14/93. The appliance vendor, demanufacturing center, or other entity recovering the refrigerant must possess EPA-approved section 608 type I or universal certification. States should ensure they have appropriate protocols in place that comply with all standards relating to the disposal of the existing appliances.
10. *Other Code Compliance Issues* – It is the state’s responsibility to ensure that weatherization-related work conform with applicable codes in jurisdictions where the work is being performed.

E. Deferral Standards

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. Note that subgrantees, which includes crews and contractors, are expected to pursue reasonable options on behalf of the client, including referrals, and to use good judgment in dealing with difficult situations.

It is suggested that subgrantees develop guidelines and a standardized form for such situations. The form should include the client's name and address, dates of the audit/assessment and when the client was informed, a clear description of the problem, conditions under which weatherization could continue, the

responsibility of all parties involved, and the client(s) signature(s) indicating that they understand and have been informed of their rights and options.

Deferral conditions may include:

1. The client has known health conditions that prohibit the installation of insulation and other weatherization materials.
2. The building structure or its mechanical systems, including electrical and plumbing, are in such a state of disrepair that failure is imminent and the conditions cannot be resolved cost-effectively.
3. The house has sewage or other sanitary problems that would further endanger the client and weatherization installers if weatherization work were performed.
4. The house has been condemned or electrical, heating, plumbing, or other equipment has been "red tagged" by local or state building officials or utilities.
5. Moisture problems are so severe they cannot be resolved under existing health and safety measures and with minor repairs.
6. Dangerous conditions exist due to high carbon monoxide levels in combustion appliances, and cannot be resolved under existing health and safety measures.
7. The client is uncooperative, abusive, or threatening to the crew, subcontractors, auditors, inspectors, or others who must work on or visit the house.
8. The extent and condition of lead-based paint in the house would potentially create further health and safety hazards.
9. In the judgment of the energy auditor, any condition exists which may endanger the health and/or safety of the work crew or subcontractor, the work should not proceed until the condition is corrected.

John Millhone
Director
Office of Weatherization and Intergovernmental Programs
Energy Efficiency and Renewable Energy

Attachments (5)