



Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 11-10
EFFECTIVE DATE: June 20, 2011

SUBJECT: GRANTEE MONITORING GUIDANCE FOR WEATHERIZATION
INNOVATION PILOT PROGRAM GRANTS

PURPOSE: To update grant guidance and management information for the Weatherization Innovation Pilot Program's (Weatherization Innovation or WIPP) Fiscal Year 2010 Grants regarding the expectations for Grantee Monitoring Plans.

SCOPE: The provisions of this guidance apply to all entities named in the Notification of Grant Award as the recipient of financial assistance under the Department of Energy's (DOE) WIPP (Grantees). This guidance should be used in conjunction with Weatherization Program Notice (WPN) 11-08, Grant Guidance for Weatherization Innovation Pilot Program Grants, dated March 2, 2011.

LEGAL AUTHORITY: The Energy Policy Act of 2005, Pub. Law 109-58, Section 126; authorizes DOE to administer WIPP.

BACKGROUND: DOE issued Grant Guidance for the WIPP Grantees through Weatherization Program Notice 11-8 on March 2, 2011. This supplemental guidance addresses Section 3.2 (Grantee Monitoring) which stipulates that WIPP Grantees must have a monitoring plan on file.

GUIDANCE: Per [WPN 11-08](#), Section 3.2 (Grantee Monitoring), WIPP Grantees are expected to develop a monitoring plan to assure quality workmanship, appropriate assignment of work, and tracking of financial resources, with specific focus on those entities involved in weatherization work. The following guidance provides additional information on the key components of the monitoring plan to be addressed.

In the WIPP program, Grantees complete weatherization work with in-house crews, or source the weatherization work to vendors or subcontractors. For either scenario, the monitoring plan should include specific protocols to cover the following:

- I. **Initial audit and work order generation:** describe the process to assure the initial audit and work orders are accurate and in compliance with Savings to Investment Ratio (SIR) guidance (per [WPN 11-08](#), Section 2.2).

- II. **Deferral standards:** define when services will be deferred or denied (may refer to WAPTAC [Deferral Standards](#), and deferral guidance in [WPN 11-06](#)).
- III. **State historic preservation:** describe process for collecting state historic preservation documentation.
- IV. **Weatherization work standards:** describe what standard the Grantee will use to detail how work is to be performed in the field (field guide, state WAP program standards, etc.). DOE's draft [Workforce Guidelines for Home Energy Upgrades](#) are recommended (to be finalized by fall 2011) as guidance for establishing work standards.
- V. **In-process inspections:** describe whether in-process inspections may be used, and if so, what percentage of units may receive in-process inspections. Such inspections are not a requirement of the WIPP program, but are a best practice among the weatherization network, as such visits allow weatherization crews to avoid future callbacks on units if problems are identified prior to unit completion, and ensure required practices (Lead Safe Weatherization, etc.) are being met.
- VI. **Final inspection:** describe process for achieving 100% final inspection of weatherized units (per [WPN 11-08](#), Section 3.2). This section should cover:
 - a. review of work orders to ensure they match final invoices (as applicable)
 - b. review of quality of final installed work
 - c. screening for missed measures
 - d. insulation certificate
 - e. final inspection (include how conflict of interest between weatherization crew work and final inspection is to be avoided)
 - f. final reporting and documentation of completed units
 - g. client satisfaction form
- VII. **Health and safety measures:** describe planned measures to ensure completed units meet DOE health and safety guidelines (per [WPN 11-08](#) Sections 2.8-2.10). Grantees may either (a) follow existing Health and Safety measures as described in the State's Plan for the formula Weatherization Assistance Program for the state in which the WIPP grantee is weatherizing, or (b) comply with the following minimum measures listed below. These following measures are based on the Minimum Energy Audit Standard (MEAS) under development by DOE and the Building Performance Institute (BPI) 101 Home Energy Audit standards.¹ The minimum measures include the following tests, and suggested language to be included in grantees' monitoring plans is provided:
 - a. **Combustion appliance safety**
 - i. **Fuel leaks** - Use a gas leak detector to locate any natural gas and propane leaks. Inspect for fuel oil leaks.

¹ If and when the MEAS or BPI standards are finalized or updated, DOE will communicate any changes to this guidance to WIPP Grantees.

- ii. **Clearance to combustibles** - As per National Fire Protection Association (NFPA) Code 211.
- iii. **Ambient CO** - Measure and document the carbon monoxide (CO) level in the ambient air of the living space (personal CO monitor is acceptable). If the living space has an ambient CO level of more than 35 parts per million (ppm) instantaneous, immediate corrective action is required.
- iv. **CO in undiluted flue gases** - Measure and document the CO level of the undiluted 'air free' flue gases after the appliance reaches steady state at worst-case combustion appliance zone (CAZ) depressurization. Natural gas and propane furnaces, boilers, and water heaters must have less than 200 ppm air-free of CO as measured to pass this test. Oil-fired furnaces, boilers, and water heaters must have less than 200 ppm air-free of CO as measured to pass this test.
- v. **CO on gas cook stoves** - Measure carbon monoxide levels of gas range burners and oven. Action must be taken if CO levels are greater than 100 ppm for ovens and 25 ppm for burners.
- vi. **Worst case CAZ** - Conduct a worst-case combustion appliance zone (CAZ) depressurization spillage test for all atmospheric or fan assisted combustion appliances. After creating the worst-case depressurization of the CAZ, the combustion appliance must not spill flue gases more than two minutes after startup to pass this test. Test results must be documented. Conduct worst-case CAZ depressurization draft test by measuring draft in vent pipe to determine strength of draft based on outdoor temperature.
- vii. **Combustion Air** - Assure that sufficient combustion air exists in the CAZ for safe operation for all atmospheric or fan assisted combustion appliances. The International Residential Code (IRC) and International Fuel Gas Code (IFGC) specify a volume of 50 cubic feet of air per 1000 Btu/hr of appliance input. (A performance-based "Worst Case CAZ" test, in addition to the test described in vi. above, can also serve as a reliable indicator of sufficient combustion air.)
- viii. **Safety shut offs** - Test pilot safety shutoff of gas appliances with standing pilot lights.
- ix. **Heat exchanger** - Check for leakage.
- x. **Unvented space heaters** - With regards to unvented gas or propane space heaters, refer to DOE WPN 08-4: Space Heater Policy for guidance.
- xi. **Daily testing** - If the weatherization job takes more than one day to complete, conduct the following tests at the end of each work day to ensure that all combustion appliances are operating safely: Ambient CO and Complete Worst-case CAZ and draft tests.
- xii. **Final testing**- As part of the final test-out of the unit ambient CO, include complete worst-case CAZ and draft tests. For single-family homes and mobile homes, a single point blower door test is required before and after weatherization.

- b. Existing and potential moisture problems** - Describe any of the following potential problems and recommended mitigation measures:
 - i. **Exterior water intrusion**
 - ii. **Interior moisture sources**
 - iii. **Condition of downspouts, flashing, etc.**
 - iv. **Presence of properly applied vapor retarders**
- c. Mechanical ventilation needs**
 - i. **Flow capacity of existing mechanical ventilation** - Use the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standard 62.2-2007 to determine the minimum ventilation levels for single-family homes, mobile homes and low rise (3-stories and less) multifamily buildings. However, grantees may, at their discretion, use the ASHRAE 62-1989 instead of ASHRAE 62.2-2007. Determine if mechanical ventilation should be installed of sufficient capacity that the completed unit meets the specifications of ASHRAE 62.2-2007 (or the ASHRAE 62-1989 “legacy approach”) if a grantee so chooses. Use ASHRAE 62.1-2010 to determine the minimum ventilation levels for other multifamily buildings. Assure ventilation rate of building and occupants meets a minimum ventilation rate that will assure health and safety of building occupants.
 - d. **Electrical hazards** - If state or local code allows insulating wall cavities that contain or may contain knob-and-tube wiring, measure the voltage drop of the applicable circuits under load. A voltage drop over 10% may indicate undersized wiring, improper splices, and other dangerous point loads due to bad connections.
 - e. **Fire or structural hazards** - Inform customers about identified and potential fire, structural, health and safety hazards related to energy systems and retrofit work.
 - f. **Substance hazards such as mold, lead, asbestos, radon etc.** Describe process for collecting:
 - i. Lead paint notification documentation
 - ii. Lead safe weatherization and certified renovator documentation
 - iii. Mold/moisture assessment
 - g. **Proper number and placement of smoke and CO alarms and verification of operability** - Describe process for verifying number, placement and operation of smoke and CO alarms.
 - h. **Connectivity between house and attached garage** - If the house has an attached garage, employ zonal pressure diagnostic testing to determine the degree of connectivity between the house and garage. Seal all penetrations to assure that no more than 200 cfm₅₀ of air flow is associated with the house to garage connection.

VIII. **Callbacks and reworks:** Describe the corrective actions the Grantee will take should work by the Grantee, vendor, or subrecipient be deemed unacceptable, including but not limited to training, increased monitoring and sanctions.

IX. **Fiscal monitoring:** Describe the method of providing fiscal oversight of subrecipients, as applicable, per 10CFR 600. Those Grantees *with* subrecipients are reminded that all flow down provisions as listed in the relevant ‘Contract Provision’ Appendices of 10CFR 600 and the terms and conditions in the Grantee awards should be included in all contractual language with subrecipients. It is DOE's expectation that Grantees will develop fiscal monitoring tools and processes for subrecipients to ensure compliance with the Financial Assistance regulations in 10CFR 600. Grantees should outline the financial monitoring process for subrecipient agreements and provide copies of the monitoring tool as part of the monitoring plan submission. At minimum, this should include internal controls, segregation of duties, and review of the subrecipient's A-133 audit.

Grantees *without* subrecipients should describe their internal processes for reviewing invoices and payments to vendors and how those payments are made in connection with final inspections completed on dwellings receiving WIPP funding. It is DOE's expectation that no work or invoices will be paid without an inspection being completed on the work performed.

Reminder Regarding Recordkeeping: As described in Weatherization Program Notice 11-08, “Grant Guidance for Weatherization Innovation Pilot Program Grants,” Section 4.3, and in each Grantees’ Terms and Conditions, Grantees must keep a customer file on each home served that includes the source documentation on the work completed. This source documentation should include proof of complying with this guidance to verify the home was healthy and safe following weatherization activity funded under WIPP. DOE Project Officers will be reviewing this documentation as part of DOE monitoring of grant activities.

CONCLUSION: Strong and effective monitoring plans for each Grantee will help ensure high quality weatherization work and prudent fiscal oversight of federal funds. DOE looks forward to working with WIPP Grantees on the implementation of these projects.



LeAnn M. Oliver
Program Manager
Office of Weatherization and Intergovernmental Program
Energy Efficiency and Renewable Energy