



TRAINING & TECHNICAL ASSISTANCE

Weatherization is an extensive process and requires continual training and support on the technical, management and programmatic elements to ensure the Program is implemented effectively.

Each year, Congress provides the U.S Department of Energy (DOE) with appropriated funds for national Training and Technical Assistance (T&TA) activities that benefit all Grantees and Subgrantees.

Grantees are encouraged to provide training and technical assistance to staff and contractors at both the Grantee and Subgrantee level. DOE allows up to 20 percent of a Grantee's total funding to be reserved for these activities. Training and Technical Assistance funds support the program's operations by:

- Conducting trainings and developing training curricula.
- Conducting analyses.
- Measuring and documenting program performance.
- Investing in the development of tools and resources.
- Monitoring the state and local agency programs.
- Promoting the application of advanced techniques and collaborative strategies to further improve program effectiveness.

In addition to the national support, many Grantees partner with community college networks, state workforce investment boards, apprenticeship programs, and labor union programs to supplement their training resources. DOE seeks to facilitate and help replicate these kinds of partnerships to better engage education and labor organizations capable of providing high quality and consistent weatherization training to a larger audience over the long term.

WEATHERIZATION BY THE NUMBERS

There are

1,675

credentialed Quality
Control Inspectors (QCI)
and

189

credentialed Energy
Auditors as of June
2016.

Guidelines for Home Energy Professionals

The Guidelines for Home Energy Professionals project is a suite of technical tools and resources developed to support the national residential energy upgrade industry and a skilled and credentialed workforce. The Guidelines were created to provide a high-quality baseline between states, agencies, employers, employees, and homeowners by incorporating input from 2,000 home performance industry members and 40 years of DOE weatherization experience. The Guidelines project includes:

- **The Standard Work Specifications for Home Energy Upgrades**
- **Accreditation of Energy Efficiency Training Programs**
- **Home Energy Professional Certifications**

Standard Work Specifications for Home Energy Upgrades

The [Standard Work Specifications \(SWS\)](#) for single-family, multifamily, and manufactured housing describe the minimum acceptable outcomes for weatherization or home performance upgrades — effective, durable, and safe energy-efficient improvements for the specific housing type.

The SWS provides *one, universal resource* for all individuals working in the field, including trainers and training coordinators, energy auditors, quality control inspectors, home inspectors, crew leaders, and energy efficiency program administrators.

By developing industry-approved work specifications and defining quality work, the SWS establish residential energy upgrades as a national industry, and provide a common benchmark against which consumers, financiers, and policymakers can measure performance of home energy-efficiency professionals.

Figure 6: Standard Work Specifications Website

The screenshot shows the website for the Standard Work Specifications Tool. At the top, there is a navigation bar with the NREL logo and links for Home, About, Help, My Account, and Sign. Below this is a search bar labeled "Search All Topics". A secondary navigation bar lists categories: Health & Safety, Air Sealing, Insulation, Heating & Cooling, Ventilation, and Baseload. The main content area features a large header "Standard Work Specifications for Home Energy Upgrades" with a background image of a house. Below the header, there is a descriptive paragraph about SWS. To the right, there are two callout boxes: "Intro" (Read an introduction to the Standard Work Specifications) and "Maintenance" (Learn how the Standard Work Specifications are maintained). At the bottom, there are three columns of content: "Guidelines for Home Energy Professionals Project Resources" with links for "Find Accredited Training", "Get Certified", and "Meet the Quality Work Plan"; "News & Updates" with a date of February 17, 2016 and a link for "Call for Applications: Quality Control Inspector Practitioners and Experts"; and "How To Video" with a link for "How to use the Standard Work Specifications (SWS) Online Tool".

Accreditation of Energy Efficiency Training Programs

High-quality work requires well-trained workers. Accredited training programs ensure that individuals receive the proper training to become certified Home Energy Professionals and to do the quality work that is defined in the Standard Work Specifications. Many people may not know the difference between certification and accreditation. In the simplest terms, an individual gets certified and training providers get accredited.

DOE and the National Renewable Energy Laboratory (NREL) developed [Job Task Analyses \(JTAs\)](#) (see *callout, right*) to set a foundation for then accredited training curricula development and execution. The JTAs catalogue the Knowledge, Skills, and Abilities (KSAs) that a practitioner needs in order to perform a given job effectively and safely. *The JTAs define what a home energy professional needs to know in order to do the job correctly.*

The JTAs are used by training providers to develop coursework that can be verified and accredited by a third-party organization. Verifying and accrediting training programs based on these JTAs ensures that consistent and high quality training programs are now available across the country (see Table 2, pg. 38).

Home Energy Professional Certifications

The [Home Energy Professional \(HEP\) certifications](#) validate a worker's capacity to demonstrate concrete and consistent abilities to perform their specified position. These advanced certifications are job-oriented and require a fully trained and experienced professional to demonstrate the comprehensive knowledge, skills, and abilities to be successful in a specific role. Candidates must have upfront job experience as a prerequisite in addition to passing both a written and practical exam.

The Home Energy Professional certifications — funded by DOE, developed by NREL and administered by [International Standards Organization](#) (ISO) accredited certifying organizations — are intended to complement one another and provide a career lattice in the home energy upgrade industry.

HOME ENERGY JOB TASK ANALYSES CATEGORIES

SINGLE FAMILY HOMES

Retrofit Installer
Technician
Energy Auditor
Crew Leader
Quality Control
Inspector (QCI)

MULTIFAMILY BUILDINGS

Retrofit Project
Manager
Energy Auditor
Building Operator
Quality Control
Inspector (QCI)

Table 2: Current IREC Accredited Training Centers by HEP Designation

NAME	LOCATION	RETROFIT INSTALLER TECHNICIAN	ENERGY AUDITOR	CREW LEADER	QUALITY CONTROL INSPECTOR
Association for Energy Affordability, Inc. (AEA)	Bronx, NY	✓	✓	✓	✓
Building Performance Center	Bellingham, WA			✓	✓
CHP Energy Solutions, LLC	Christiansburg, VA	✓	✓	✓	✓
COAD Ohio Weatherization Training Center	Athens, OH	✓	✓	✓	✓
Energy Coordinating Agency of Philadelphia, Inc.	Philadelphia, PA	✓	✓		
Everblue	Huntersville, NC		✓		✓
FSL Southwest Building Science Training Center	Phoenix, AZ	✓	✓		
Florida Solar Energy Center	Cocoa, FL		✓		✓
Greenfield Community College	Greenfield, MA		✓		
Greater Bergen Community Action, Inc.	Hackensack, NJ		✓		
Indiana Community Action Association (INCAA)	Indianapolis, IN	✓	✓	✓	✓
Indoor Climate Research & Training, University of IL	Champaign, IL		✓		✓
Institute of Environmental Management & Technology	Shelton, CT	✓	✓	✓	✓
Los Angeles Trade-Technical College	Los Angeles, CA	✓	✓		
Montana Weatherization Training Center	Bozeman, MT	✓	✓	✓	✓
National Sustainable Structures Center	Williamsport, PA	✓	✓	✓	✓
New York State Weatherization Directors Association (NYSWDA)	Guilderland, NY			✓	✓
Oklahoma Association of Community Action Agencies	Edmond, OK	✓	✓	✓	✓
Pulaski Technical College Weatherization Training Center	North Little Rock, AR	✓	✓	✓	✓
Residential Energy Efficiency - Training Initiatives	Frankfort, KY		✓		✓
Southface Energy Institute	Atlanta, GA	✓	✓		✓
Santa Fe Community College	Sante Fe, NM	✓	✓	✓	✓

Standardized Training Curricula

In September 2009, DOE launched development of a standardized training curricula for the Weatherization Network to use and adapt to meet its specific regional or local training needs.

The Weatherization curriculum contains multiple modules covering many fundamental Weatherization topics. It is editable, flexible and offers an experienced instructor a baseline of core content upon which to build robust and compelling coursework. The Standardized Curriculum is aligned with the JTAs and provides a solid foundation for accreditation.

Each curricula module contains multiple chapters with PowerPoint presentations, speaker notes, prop schematics and hands-on props where applicable, lesson plans, quizzes, additional resources, a glossary of key terminology, and either a sample course schedule or a master bibliography and instructions.

The curricula is routinely reviewed and updated when industry information or programmatic details are introduced or updated (e.g. new WPNs).

Quality Work Plan

The [Quality Work Plan \(QWP\)](#) defines what is required when federal dollars are used to purchase weatherization services and leverages the resources developed through the Guidelines for Home Energy Professionals project. The QWP was created to ensure the Weatherization Network has a common set of expectations for the quality of work and training across the program. Among the goals of the QWP are:

- Consistent expectations at all levels of monitoring.
- Highlight the value of experienced crews.
- Define and encourage high quality training.
- Create consistency in inspection methods.
- Set national standards for work quality.
- Encourage the use of portable and nationally recognized credentials for Weatherization workers.

This QWP not only defines how home energy upgrade work should be done, but it also provides a prescription for communication, training, and the inspection of work throughout the Weatherization Network.

STANDARDIZED TRAINING CURRICULA MODULES

Installer/Technician
Fundamentals 2.0

Installer/Technician Mobile
Homes

Crew Leader 2.0

Energy Auditor - Single
Family 2.0

Quality Control Inspector 2.0

Energy Auditor - Multifamily

Heating Systems for Energy
Auditors & Inspectors

Mechanical Systems -
Multifamily

Train the Trainer

Health & Safety Training for
Programmatic Staff

Lead Safe Weatherization
(LSW)


ASHRAE 62.2

Effective Management | Quality Management Plan

DOE believes in effectively managing the administrative, programmatic, and technical aspects of Weatherization. As such, identifying the Knowledge, Skills, and Abilities (KSAs) necessary to carry out various tasks related to performing the role of a Grantee and Subgrantee are very important. One aspect of effective management is keeping consistent records. [10 CFR 440.24](#) requires, among other specific recordkeeping requirements, Grantees and Subgrantees administering Weatherization keep records for an effective audit and performance evaluation.

Based on this requirement, DOE requires Grantees to keep records related to client file documentation (Figure 7). In recent years, state and federal monitoring and oversight led DOE to develop a framework to assist Grantees and Subgrantees in how to keep records consistently and how to provide access to the documentation supporting a weatherized unit.

Figure 7: Weatherization Client File Checklist



U.S. DEPARTMENT OF ENERGY

WEATHERIZATION ASSISTANCE PROGRAM

CLIENT FILE CHECKLIST

The following elements are expected to be in a Weatherization Assistance Program (WAP) client file. This list is broken into "buckets" demonstrating what constitutes a complete client file.

However, Grantees will vary in the specific contents and how the information is organized. This is not intended to be a prescriptive list of forms but rather a guideline to assist Grantees, and by virtue the Subgrantees, in aligning file requirements to create a comprehensive client file that is able to adequately communicate how weatherization worked in that home. It is NOT a prescriptive list of forms.

- 1. SUBGRANTEE SIGN OFF SHEET**
 This is a cover sheet documenting someone has reviewed the entire client file against the requirements of the Grantee and all information is contained within the file and the job is considered complete and ready to be closed.
- 2. ELIGIBILITY**
 The following are the elements related to the eligibility of the unit. These documents may be in the file or possibly "on file," depending on the Subgrantee file structure.
 - Income Eligibility Documentation:** Consistent with Poverty Income Guidelines at time of application.
 - Owner/Rental Documentation:** Proof of ownership OR signed rental agreement.
 - Deferral Information, if applicable:** Documentation/letter to client related to either a deferral or activities that need to be accomplished for work to begin.
 - State Historic Preservation (SHPO) Documentation:** If applicable, any SHPO correspondence related to the unit.
- 3. CLIENT CORRESPONDENCE AND SIGN OFFS**
 Each file must have clear records of any client interactions during the weatherization process.

EXAMPLES:

 - Notification to the client on approval (or denial) for service**
 - Timeline for anticipated next step (for instance, when client should anticipate to hear from the Subgrantee for an audit to be scheduled).

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Grantees and Subgrantees continue to execute DOE's expectation of high quality management and proper documentation of Weatherization resources by demonstrating:

- Program rules are being followed (e.g., eligibility requirements are being followed).
- Appropriate cost effective measures are being installed (e.g., audit results are consistent with the work order generated and the invoice costs are consistent with those estimated in the audit).
- Health and Safety issues are treated according to guidance (e.g., Certified Renovator is assigned to lead-paint jobs).
- Inspections are occurring as required (e.g., 100% of the units are inspected and the post-inspection checklist includes the inspection of the audit assessment).

Financial Management | Procurement Toolkit

In recent years, DOE increased the focus on financial management during onsite monitoring visits as a result of Investigator General (IG) reports that identified questionable costs charged to the DOE grants.

To assist Grantees to financial and administration compliance, DOE developed the [Weatherization Financial Toolkit](#). The Toolkit serves as a universal training curriculum to educate weatherization professionals on how to comply with financial regulations governing the Program. The Toolkit is comprised of two sections - Program Regulations and Procurement. Each section contains trainer and participant materials and resources to make it simple for Grantees to provide comprehensive training to their network.

The latest update to the Toolkit reflects the changes from December 26, 2014, wherein the DOE Financial Assistance regulations contained in 10 CFR 600 were superseded by the Financial Assistance regulations contained in [2 CFR 200](#) (with DOE regulations specific to for-profit organizations codified in [2 CFR 910](#)).

Energy Audits Procedures

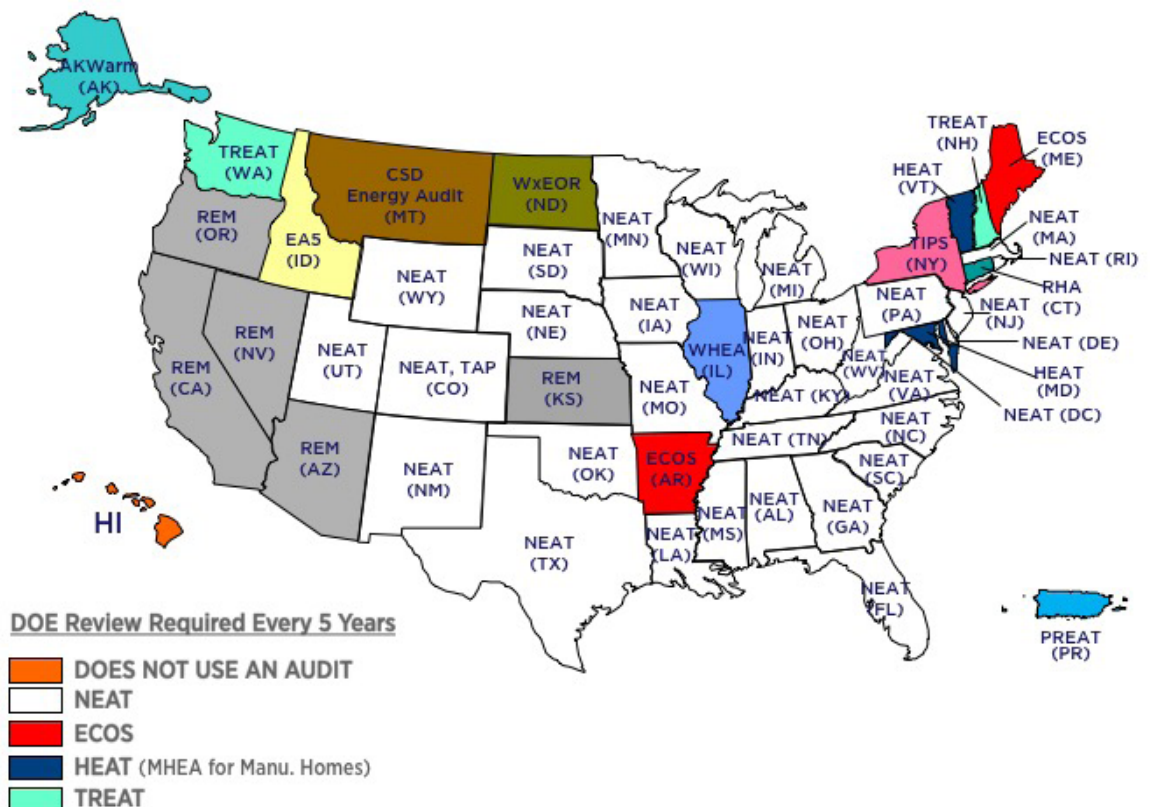
Regulations published on December 8, 2000, changed the energy audit requirements for Weatherization and established a single audit criterion (*what was formerly referred to as the waiver audit*) as the minimum for energy audits used. To ensure Grantees adopt advanced energy audit procedures of sufficient technical rigor, Grantees must submit their energy audit systems and procedures to DOE for approval **every five years**.

DOE follows an energy audit review process (see Figure 10) to review the energy calculations used by software, as well as the auditing, testing, and installation standards used in the field as well as health and safety protocols.

DOE also sponsored the development of the **National Energy Audit Tool (NEAT)** so that all Grantees would have access to a computerized tool to help select cost-effective measures for single-family houses. However, Grantees are permitted to develop their own software or purchase commercially available software provided that DOE has reviewed and approved the software complies with program regulations.

Figure 8 identifies which energy audit system each Grantee currently is approved for and Figure 9 identifies those Grantees that use a Priority List as part of their energy audit procedures.

Figure 8: Current Single-Family Energy Audits by Weatherization Grantee



Updated 6/17/2015

Figure 9: Weatherization Grantees that use a Priority List As Part of their Energy Audit Procedures for Single-Family Homes

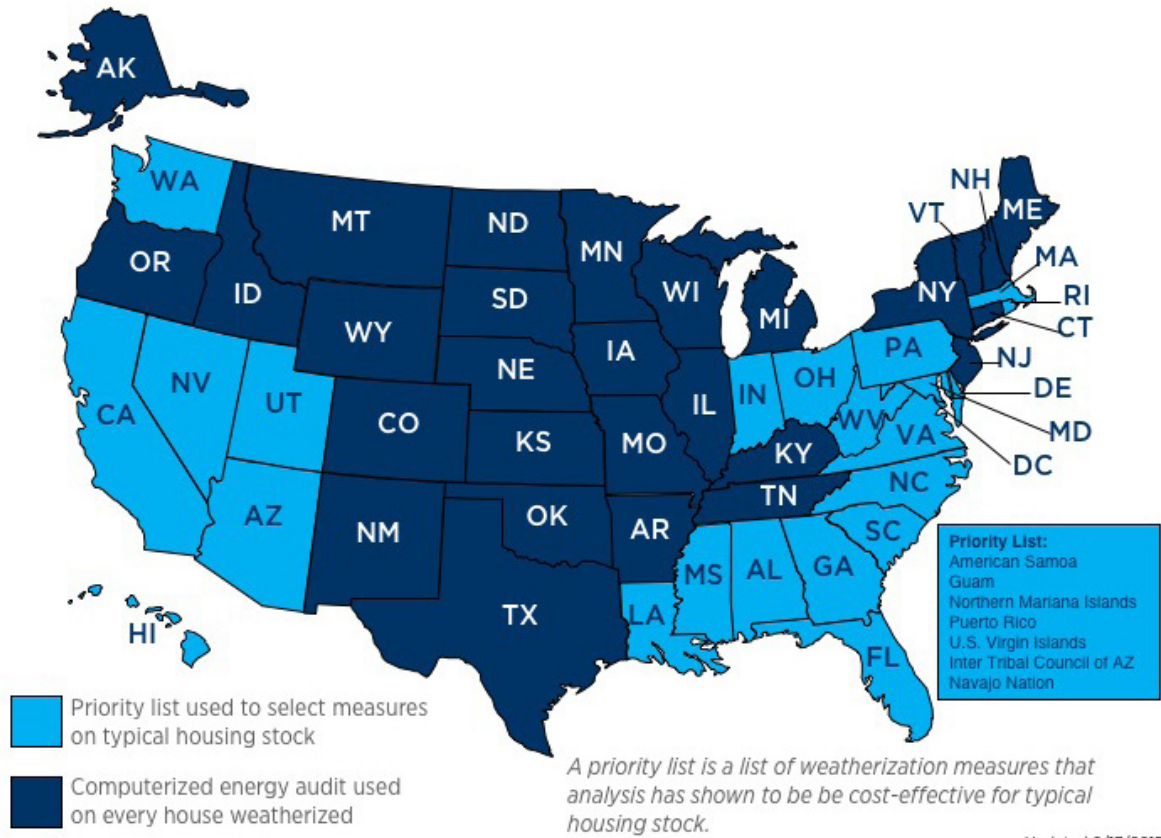


Figure 10: Weatherization’s Energy Audit Review Process

1 PREPARATION

Grantee reviews WPN 16-8 six to twelve months prior to expiration and advises the DOE Project Officer (PO) of its intended reapproval plan (e.g. same audit tool, different tool).



2 CONSULTATION

Grantee and DOE (PO and contractors when needed) hold a conference call to discuss the audit submittal.
 Establish tentative timeline • Discuss nuances & changes since last submission • Identify immediate next steps



3 SUBMISSION

Grantee submits the required documentation to the DOE PO on their status and/or system.

IF AUDIT IS NOT CURRENTLY DOE APPROVED:

Grantee submits Analytic Methods (per WPN 16-8) and audits of benchmark buildings.

IF A PRIORITY LIST IS USED:

Grantee also submits Priority List(s) and justification of Priority List(s).

IF SEEKING APPROVAL FOR MULTIFAMILY:

Grantee submits required info for multifamily.



4 EVALUATION

PO and review team return comments to Grantee within **3-4 weeks** (4-6 weeks for previously unapproved audits).



5 APPROVAL

If DOE has no comments or comments can be resolved easily by phone or e-mail, DOE issues approval memo within 2 weeks of final resolution. If DOE comments are substantial, Grantee responds to DOE comments. PO and review team review and return comments or accept Grantee’s resolution within 3-4 weeks of Grantee’s resubmittal.

