



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Incorporating WPN 15-4 into the WAP 2015 Application Package

February, 2015

Introduction

- Weatherization Program Notice (WPN) 15-4 outlines requirements for work quality, worker training and certification for Grantees in the Weatherization Assistance Program (WAP).
- The 2015 WAP Application Package must include information on how Grantees will implement these requirements into their program in the 2015 Program Year.

Presentation Summary

- Background information on, and summary of, WPN 15-4 requirements
- Guidance for integrating these requirements into the 2015 WAP Application Package
- Resources for implementing these requirements

WPN 15-4 - Overview

Four Primary Sections

- **Guidelines and Standards** (defining work quality)
- **Communication** (getting everyone on the same page)
- **Inspection and Monitoring** (ensuring clients receive good work)
- **Training** (making sure WAP workers are qualified to do the work)

– Find WPN 15-4 here:

http://energy.gov/sites/prod/files/2014/10/f18/wpn_15_4.pdf

EERE WAP Clearinghouse

QUALITY WORK PLAN REQUIREMENTS

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The U.S. Department of Energy's Weatherization Assistance Program (WAP) has introduced a comprehensive Quality Work Plan (QWP) that will establish a benchmark for quality home energy upgrades. This plan 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. Below you will find links to QWP guidance, as well as links to the individual requirements.

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 WAP network. The plan is aimed to address three critical questions:

- What does quality work look like?
- How should workers be trained?
- How should home energy upgrade work be verified?

LINKS TO QUALITY WORK PLAN GUIDANCE

- [WPN 15-4: Quality Work Plan Requirement Update](#) - Effective October 21, 2014: This guidance provides updates to WPN 14-4 issued December 2, 2013. This guidance supersedes 14-4 and describes requirements to support and verify quality work in the Department of Energy's (DOE) Weatherization Assistance Program (WAP).
- [2014 Quality Work Plan Update Presentation](#) - This presentation was given by Josh Olsen of the U.S. Department of Energy at the 2014 ACI National Home Performance Conference & Trade Show

YOUR GUIDE TO THE QUALITY WORK PLAN REQUIREMENTS

The Quality Work Plan consists of four major requirements. To ensure that you are in compliance with the QWP, learn more about each of the following individual requirements:



GUIDELINES AND STANDARDS REQUIREMENT



COMMUNICATIONS REQUIREMENT



INSPECTION AND MONITORING REQUIREMENT



TRAINING REQUIREMENT

<http://energy.gov/eere/wipo/quality-work-plan-requirements>

Grantee QWP Checklists

Quality Work Plan Checklist and Resources – Section 1

State staff can use this list of questions and related resources to help implement the WAP Quality Work Plan. Each question includes reference to where in 15-4 the guidance behind the question is found, and where in the 2015 Application Package you will describe the answers to DOE.

| App Section | 15-4 Section | Question | Yes | No | Resources |
|-------------|--------------|---|-----|----|---|
| V.5.1 | 1 | Are you on track to submit current field guides and standards, including any necessary variance requests, to DOE for review and approval before your PY 2015 start? | | | SWS on-line tool SWS Variance Request Form Aligning Technical Resources to the SWS – Presentation SWS Field Guide Collaboration – Video How to use the NREL SWS Field Guide Tool - Video |
| V.5.1 | 1 | If yes: Have your technical resources been approved by DOE? | | | |
| | | Date: | | | |
| V.5.1 | 1 | If no: Have you developed a timeline and plan for completing technical resources to include in the Application package? | | | |
| V.5.1 | 1 | Do you have a written process for distributing technical resources to Subgrantee agencies | | | |



RESOURCES FOR MEETING THIS REQUIREMENT

Grantees should refer to the above Checklist for the Guidelines and Standards Requirement, however these resources may also be of assistance.

- **Standard Work Specifications (SWS) Online Tool**
- **How to align field guides and standards with the SWS** - This presentation demonstrates how to align field guides and standards to the SWS.
- **Using the NREL Field Guide Tool** - This presentation was given by Chris Baker at the 2014 NASCSP Mid-Winter Training Conference and includes reference to the online resource, **Success with Home Performance**. This resource demonstrates that while the SWS will tell you what quality looks like, these "critical details" tell you how to get there. They are the step-by-step process, using the latest best practices to accomplish common measures and meeting the standards outlined in the SWS.
- **SWS Field Guide Collaboration** - This presentation was given by Amanda Hatherly at the 2014 ACI National Home Performance Conference & Trade Show.
- **SWS Variance Request Form** - As Grantees update and revise their field standards to align with the SWS, they may discover certain specifications that cannot be implemented precisely as described in the relevant SWS. In such cases, Grantees may request a variance from the relevant SWS.

Guidelines For Home Energy Professionals Project



Define the Work

Verify the Training

Certify the Worker

Standard Work Specifications for Home Energy Upgrades (SWS)

- Single Family, Manufactured Housing and Multifamily became available this summer
- <https://sws.nrel.gov/>

The IREC Accreditation Program for Energy Efficiency Training Programs

- IREC Accredited Training Available since May 2011.
- <http://www.irecusa.org/credentialing>

Home Energy Professional Certifications

- BPI Earned ANSI ISO 17024 Accreditation on Friday!
- National Roll-Out in Mid-October
- <http://www.bpi.org>

Job Task Analyses for Weatherization and Home Performance Workforce

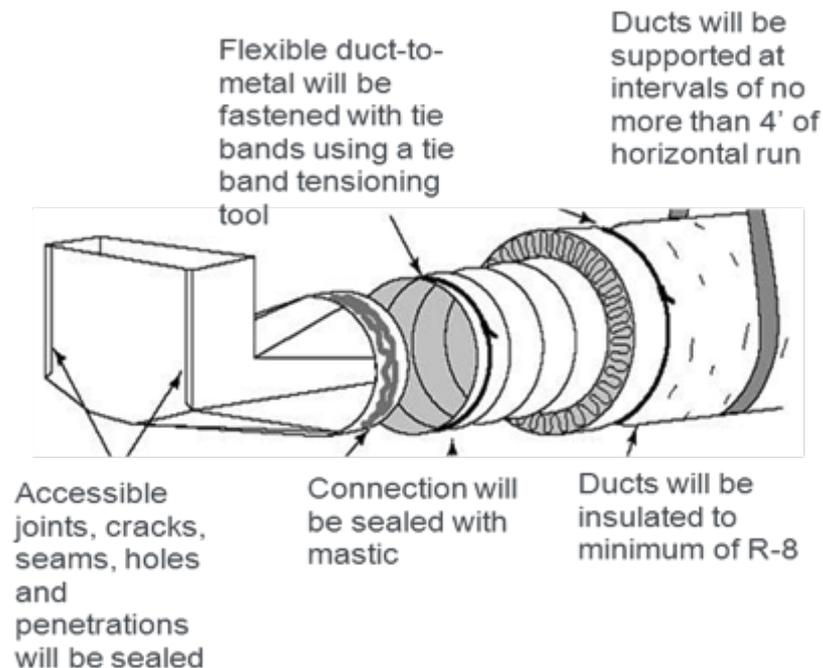
- <http://www1.eere.energy.gov/wip/wap.html>



Define the Work



Standard Work Specifications For Home Energy Upgrades



A National Baseline for Work Quality



Standard Work Specifications

- 1.  Health & Safety
- 2.  Home Perf. Assessment
- 3.  Insulation
- 4.  Air Sealing
- 5.  Heating & Cooling
- 6.  Ventilation
- 7.  Baseload

Topic: Attics

Subtopic: Attic Openings

4.1006.1 Detail Name: Pull-Down Stairs

Desired Outcome

Pull-down attic stair properly sealed and insulated

The **Objective** defines the required outcomes of the work.

| Row | Title | Specification(s) | Objective(s) |
|-----------|--------------|--|--|
| 4.1006.1a | Installation | <p>Hatches will be insulated with non-compressible insulation and the measure will include a protective barrier or baffle</p> <p>Pull down stair assembly will be insulated to the same R-value as the adjoining insulated assembly</p> <p>Pull down stair rough opening will be surrounded with a durable dam that is higher than the level of the attic floor insulation</p> | <p>Achieve uniform R-value</p> <p>Prevent loose insulation from entering the living area</p> <p>IECC R 402.2.4</p> |

The **Specification** defines the minimum level of action required to meet the **Objective**.

Standard Work Specifications Tool

 Go

Health & Safety

Air Sealing

Insulation

Heating & Cooling

Ventilation

Baseload

SAFE WORK PRACTICES

Safe Work Practices

Air Sealing

Insulation

Heating & Cooling Equipment

Ventilation Equipment

Baseload

Material Safety

Basements & Crawl Spaces

COMBUSTION SAFETY

Combustion Safety Testing-
General

Unvented Space Heaters

Vented Gas Appliances

Additional Resources

SAFETY DEVICES

Combustion Safety Devices

MOISTURE

Air Sealing

Drainage

Vapor Barriers

Space Conditioning

RADON

Air Sealing

ELECTRICAL

Knob & Tube Wiring

OCCUPANT EDUCATION & ACCESS

Basements & Crawl Spaces

Installed Equipment

Once we know what the work is...

...we can figure out what a worker needs to know to do the job right

Knowledge,
Skills, Abilities

Job Task Analysis



The Weatherization Workforce

Single Family:

Retrofit Installer/Technician

Crew Leader

Energy Auditor

Quality Control Inspector

Multifamily:

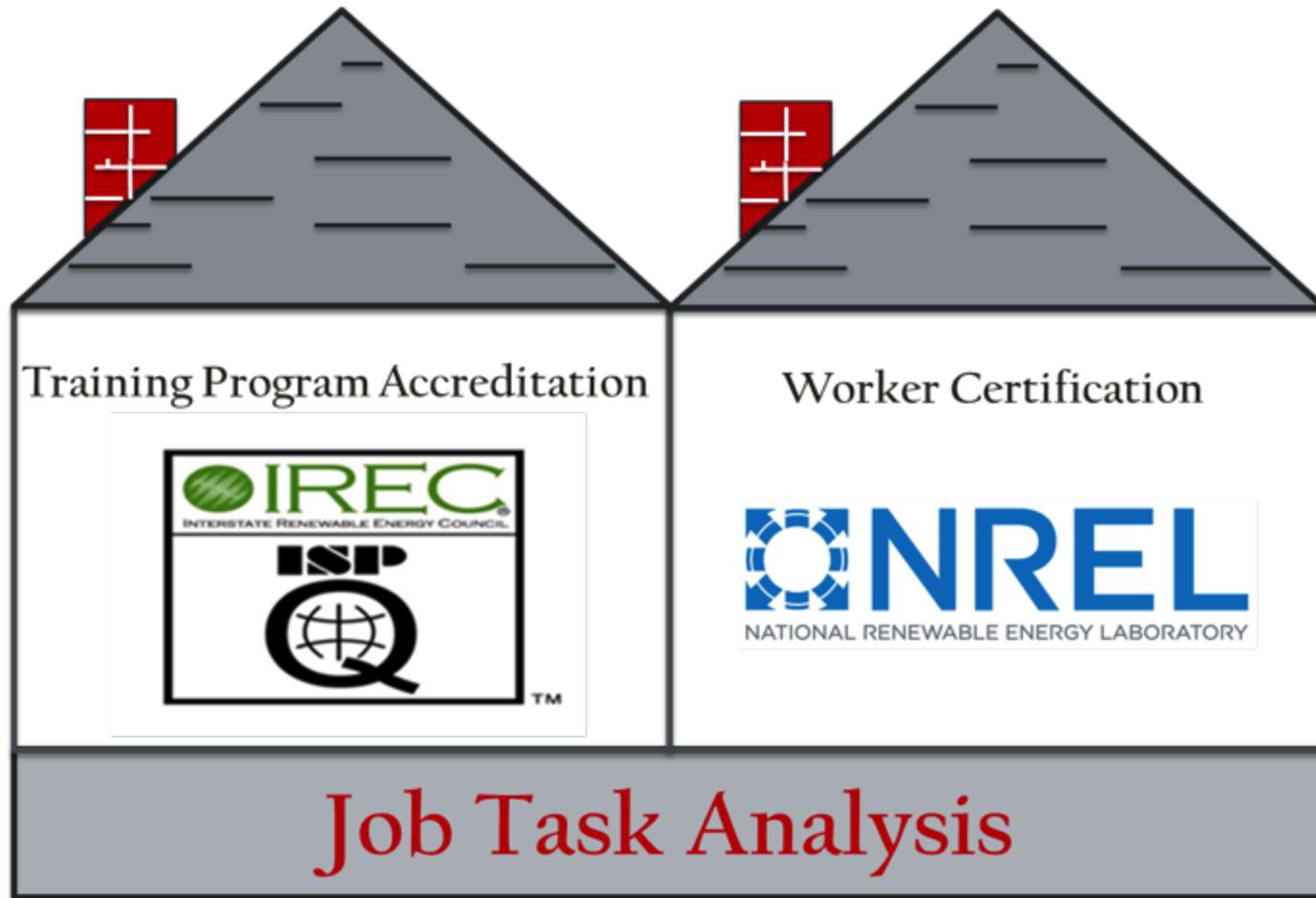
Building Operator

Energy Auditor

Project/ Program Manager

Quality Control Inspector

Job Task Analysis is the Foundation of the Workforce



Verify the Training

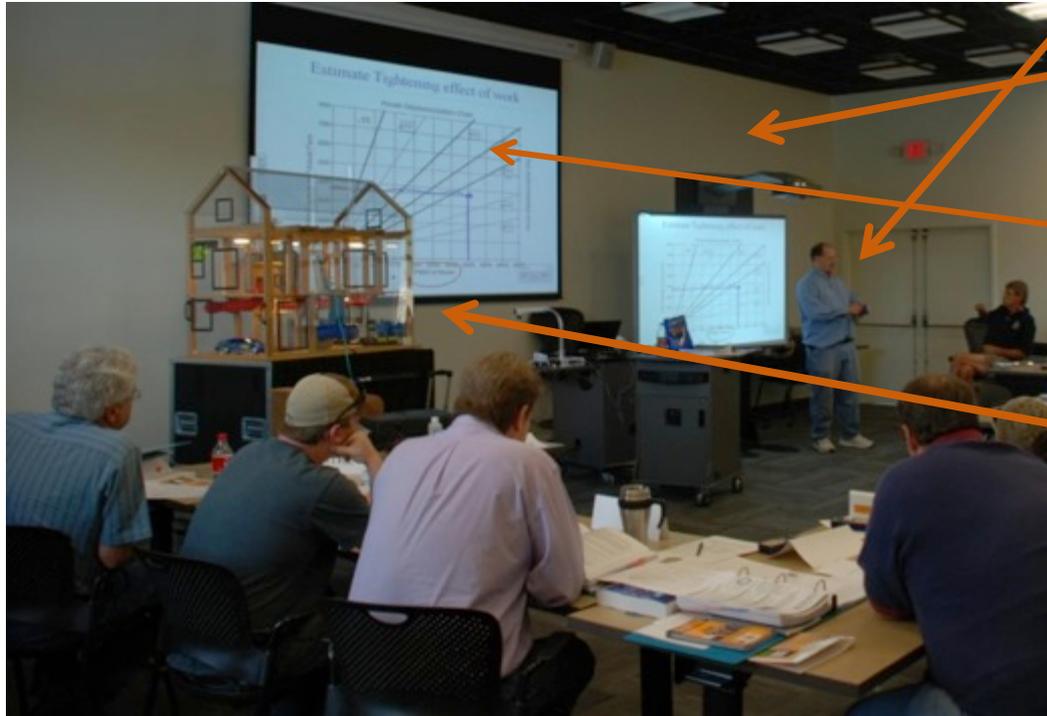


The Accreditation of Energy Efficiency Training Programs

A national, 3rd party assessment of energy efficiency training programs

Accreditation of Training Programs

Currently administered by the
**Interstate Renewable
Energy Council**



Qualified Instructors

High Quality Facilities

Complete Curriculum
Based on the JTA

Props/Tools

Policies and Procedures

*****Voluntary, third-party assessment of training provider quality**

Certify the Worker



National Home Energy Professional Certification



A national, job oriented certification program for the four most common residential energy efficiency jobs

Certification of Workers



Based on the Job Task Analyses and SWS
4 Weatherization/Home Performance Jobs

- Retrofit Installer Technician
- Crew Leader
- Energy Auditor
- Quality Control Inspector

Independent 3rd Party Administered
NREL/DOE developed Framework

Accreditation vs. Certification

Accreditation

- Awarded to Organizations (Training Programs)
- Signifies an ability to provide high quality training for specific disciplines
- Currently administered by IREC

Certification

- Awarded to Individuals
- Verifies that the individual possesses certain specific knowledge and skills
- Currently administered by BPI

WPN 15-4 - Section 1: Guidelines and Standards

Background:

The intent is to ensure that all instructional materials direct workers to install work that will meet the minimum standards for quality outlined in the SWS.

Summary of the requirement:

All field guides and standards will be written to ensure that the content meets or exceeds the guidance in the SWS and that the SWS is referenced appropriately.

Variance requests will be submitted for measures that vary from the SWS

Integrating WPN 15-4 - Section 1 into the 2015 WAP Application Package

- Submit SWS-aligned Field Guides/Standards and Variance requests to DOE 90 days prior to the start of Program Year 2015
- Include copies of signed Field Guide Approval and Variance Request Forms with the 2015 Grantee Plan. **Attach to the SF-424**
- Describe the process for distributing Field Guides/Standards to all necessary individuals and organizations. **Include in the 2015 WAP Application Master File Section V.5.1**

Resources for Implementing WPN 15-4 - Section 1 Requirements

RESOURCES FOR MEETING THIS REQUIREMENT

Grantees should refer to the above Checklist for the Guidelines and Standards Requirement, however these resources may also be of assistance.

- **Standard Work Specifications (SWS) Online Tool**
- **How to align field guides and standards with the SWS** - This presentation demonstrates how to align field guides and standards to the SWS.
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- **SWS Field Guide Collaboration** - This presentation was given by Amanda Hatherly at the 2014 ACI National Home Performance Conference & Trade Show.
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WPN 15-4 - Section 2: Communication

Background:

- Ensures that all organizations and individuals in the WAP delivery system are aware of and have access to the national expectations for work quality

Summary of the requirement:

- Grantees must provide subgrantees and/or contractors with comprehensive and clear requirements for work quality in contract language
- Grantees must ensure that subgrantee vendor contracts contain the same requirements
- Grantees must confirm receipt of these requirements and provide clarification on request

Integrating WPN 15-4 - Section 2 into the 2015 WAP Application Package

2015 WAP Application Package Section V.5.1

- Submit language from subgrantee contracts that outlines work quality requirements and flowdown requirements. **Place in either the Master File or attach to the SF-424**
- Describe how the Grantee will confirm receipt of the requirements. * Usually, via a signature on a contract. **Place in either the Master File or attach to the SF-424**

WPN 15-4 - Section 3: Inspection and Monitoring

Background:

- Ensure that all homes receive a quality control inspection, by a qualified individual, that ensures that work has been installed in accordance with national and local requirements.

Summary of the requirement:

- All individuals performing work quality inspections in client homes must be certified as Home Energy Professional Quality Control Inspectors.
- All homes will receive a quality control inspection that ensures that all work has been performed in accordance with the SWS

WPN 15-4 - Section 3: FAQs/Details

- Grantee Monitors and Certification-
 - Any individual performing inspections of completed weatherization units as part of the Grantee's required minimum percentage must be a certified QCI. The certified QCI may be either an employee of the Grantee, or a contractor to the Grantee. Other monitoring conducted by the Grantee is not required to be performed by a certified QCI.
- Grantee Monitoring Inspections and Diagnostics
 - Must include all diagnostic testing and work quality installation inspections on DOE required percentage of units (5% or 10%)
 - Additional inspections beyond the Grantee's minimum required percentage may be conducted at the level of detail determined to be appropriate by the Grantee. Inspection Forms must indicate that the SWS were followed

WPN 15-4 – Section 3: FAQ's/Details Cont.

- Grantee must have policies for addressing non-performing inspectors. Disallowed costs, remedial training, etc..
- Inspectors working in Multifamily building must receive training specific to that housing type

Integrating WPN 15-4 - Section 3 into the 2015 WAP Application Package

WAP 2015 Application Package Section Mater File Section V.5.3 and/or V.8.3

Quality Control Inspection Policy Components

- Certified Inspectors: How many do you need, do you have them?
- Process for validating QCI credentials
- Process to address a QCI shortage
- Inspection policies and procedures
 - How will the QCI be related to the work- Independent/Auditor Inspector
- Multifamily Inspector training

Integrating WPN 15-4 - Section 3 into the 2015 WAP Application Package

WAP 2015 Application Package Section Mater File Section V.5.3 and/or V.8.3

Monitoring Policy Components

- Percentage of units to be monitored- based on on QCI being independent of the work
- Who will perform work quality inspections during monitoring
- Policy to address non-performance by a QCI

Resources for Implementing Section 3 Requirements

RESOURCES FOR MEETING THIS REQUIREMENT

Grantees should refer to the above Checklist for the Inspection and Monitoring Requirement, however these resources may also be of assistance.

- **How to create a quality control checklist using the SWS Online Tool**
- **Registry of certified Home Energy Professionals by state** - Verify the certification of an individual either by first and last name or by state.
- **Accredited Home Energy Professional Certification Training Centers** - Find an accredited training center near you.
- **A training self-assessment to determine training needs/exam readiness** - This document contains four self-assessment forms that are aligned with the Home Energy Professional Certifications. These forms will help individuals gauge competency and identify training needs before an exam is taken.
- **Quality Control Inspector (QCI) Pre-Home Energy Professional Certification Exam Quiz** - This quiz is not representative of, nor related to the content of the actual QCI exam. While it is not an official indication as to whether or not someone can successfully pass the exam, it can be used as an assessment when deciding whether or not one is prepared to take the exam.
- **Role of QCI in regards to the Home Energy Professional Certification Exam**
- **List of participating Home Energy Professional Certification Testing Centers**



WPN 15-4 - Section 4: Training

Background:

- Provides requirements to ensure that WAP training funds are spent on resources that have been accredited to provide comprehensive training.

Summary of the Requirement:

- Two categories of Training:
 - Tier 1-** Regular, comprehensive training for Field Staff that is accredited to align with the JTA.
 - Tier 2-** Issue specific, single trainings to address special skills or acute issues
- Grantees training plans must focus on providing Field Staff with regular Tier 1 training

Tier 1 Training Definition



Infrared camera

To help determine air leakage and insulation



Combustion analyzer

Tool designed to sample flue gases in vented combustion appliances and measure flue gas temperature, leaks and carbon monoxide



Blower door

A large fan that depressurizes the home by sucking air out. This test simulates the effect of a 20-mile-per-hour wind to allow the auditor to find air leaks



Manometer

A gauge that measures the differences in pressure in a home to pinpoint air leakage and test exhaust devices for proper operation



Smoke generating device

Produces a thin stream of smoke or non-toxic fog to help find air leakage and duct leakage



Watt meter

Measures the electrical energy used by various devices throughout the home

- Comprehensive- All the knowledge and skills needed to perform a certain job
- Occupation-specific
- Aligned with Job Task Analysis (JTA) for occupation
- Administered by (or in cooperation with) accredited training center

For example-Tier 1 Training for an auditor would include the training to use all these tools....and much more

Tier 2 Training Definition



- Single-issue
- Addressing special skills (ex. NEAT Audit) or acute deficiencies in the field
- No federal requirements for training staff
- Conference trainings are considered Tier 2



If T&TA stood for Teeth and Tooth Aches

- Tier 1 is your regular bi-annual cleaning.



Tier 1

- Tier 2 is the emergency visit when you break a tooth or require something beyond your regular maintenance, like dentures.



Tier 2

Tier 1 Training Structure

Energy Auditor Job Task Analysis

Domains/Tasks

- **Domain 1:** Demonstrating Professional Energy Auditor Conduct
 - **Domain II:** Collecting information about the Building for an Energy Audit
 - **Domain III:** Testing the Building For an Energy Audit
 - Task 1: Preparing for the test(s)
 - Task 2: Evaluate the appliances
 - Task 3: Conduct indoor air quality tests
 - Task 4: Perform combustion safety and efficiency tests
 - Task 5: Perform blower door tests
 - Task 6: Perform HVAC distribution tests
 - **Domain IV:** Evaluating Collected Energy Audit Data
- A comprehensive training ensures that all Domains and Tasks are covered.
 - The JTA can be broken down into components to allow training to take place over multiple sessions

Tier 1 – Misconceptions cleared up

The guidance does not:

- Require comprehensive Tier 1 training every year.
- Prohibit State monitors from playing a role in training.
- Define weatherization field staff.
- Require certification of any position other than QCI.



Tier 1 Options

- Send workers to training center for complete, accredited training.
- Bring training center to you (they all travel) for concentrated Tier 1 training.
- Combine distance and/or on-line learning with in-person instruction.
- Arrange for training delivery over the course of months to eventually cover entire JTA.
- Incorporate state-specific sessions into Tier 1 training to cover all technical training needs at once.

Elements of a Training Plan

Scope of the Training Plan

- Describe the time horizon for the training plan- 1 year, 3 year etc.
- Identify Trainees- Who will you train with WAP funds?
 - All field workers? **Contractors and Crews?**
 - Only inspectors/auditors/crew leaders/installers?
- Determine how frequently the trainees will receive comprehensive training- Every year/Every 3 years/Continuously through ongoing JTA modules?

Elements of a Training Plan, cont...

Implementation of the Training Plan

- Determine how the trainees will receive comprehensive training- Full in-person training, Distance learning hybrid, individual modules over time etc.
- Identify the accredited training program (s) that will deliver the training.
- Describe how Tier 2 training needs will be identified and when Tier 2 trainings will be delivered in lieu of waiting for comprehensive training to cover the need.

Training Plans must be placed in the WAP 2015 Application Package Master File, Section V.8.4

Resources for WPN 15-4 Section 4

RESOURCES FOR MEETING THIS REQUIREMENT

Grantees should refer to the above Checklist for the Training Requirement, however these resources may also be of assistance.

- WAP-standardized curricula that is aligned with the corresponding **Job Task Analysis (JTA)**:
 - **Energy Auditor**
 - **Crew Leader**
 - **Retrofit Installer/Technician**
 - **Quality Control Inspector**
 - **Quality Control Inspector Addendum**
- **Accredited Home Energy Professional Certification Training Centers** - Find an accredited training center near you.
- **A training self-assessment to determine training needs/exam readiness** - This document contains four self-assessment forms that are aligned with the Home Energy Professional Certifications. These forms will help individuals gauge competency and identify training needs before an exam is taken.
- **Quality Control Inspector (QCI) Pre-Home Energy Professional Certification Exam Quiz** - This quiz is not representative of, nor related to the content of the actual QCI exam. While it is not an official indication as to whether or not someone can successfully pass the exam, it can be used as an assessment when deciding whether or not one is prepared to take the exam.
- **Role of QCI in regards to the Home Energy Professional Certification Exam**
- List of **participating Home Energy Professional Certification Testing Centers**

The national network of Weatherization Training Centers may also offer training to prepare for the Home Energy Professional Certification exams. For more information, **contact a Weatherization Training Center near you.**

Questions?

Project Officer

and/or

Josh Olsen

Department of Energy, Weatherization Assistance Program

Joshua.olsen@ee.doe.gov

202-287-1813