

Technical Management Areas

WEATHERIZATION ASSISTANCE PROGRAM

February 2018



Session Goals

By the end we hope you will:

- Know what you need to know (even if you don't know it yet),
- Be able to find relevant resources, and
- Have a sense of timelines for developing pieces.

Session Outline

- **Energy Audits and Priority Lists**
- **Field Guides**
- **Training**
- **Certifications**
- **Inspections & Monitoring**

Energy Audits and Priority Lists

- Requirements for submittals
- Common audit submittal pitfalls
- Relevant resources

Energy Audits

- Do you know what yours is?
- Do you know what DOE allows when you want to update?



The BIG Picture

- Submit to DOE every 5 years (or less)
- Must have SF and MH approved audits (or Priority lists)
- If MF (5+ units) >20% production – need approval
- If MF < 20% production – can submit projects as needed
- MF general – conditioned on maintaining technical expertise

The BIG Picture

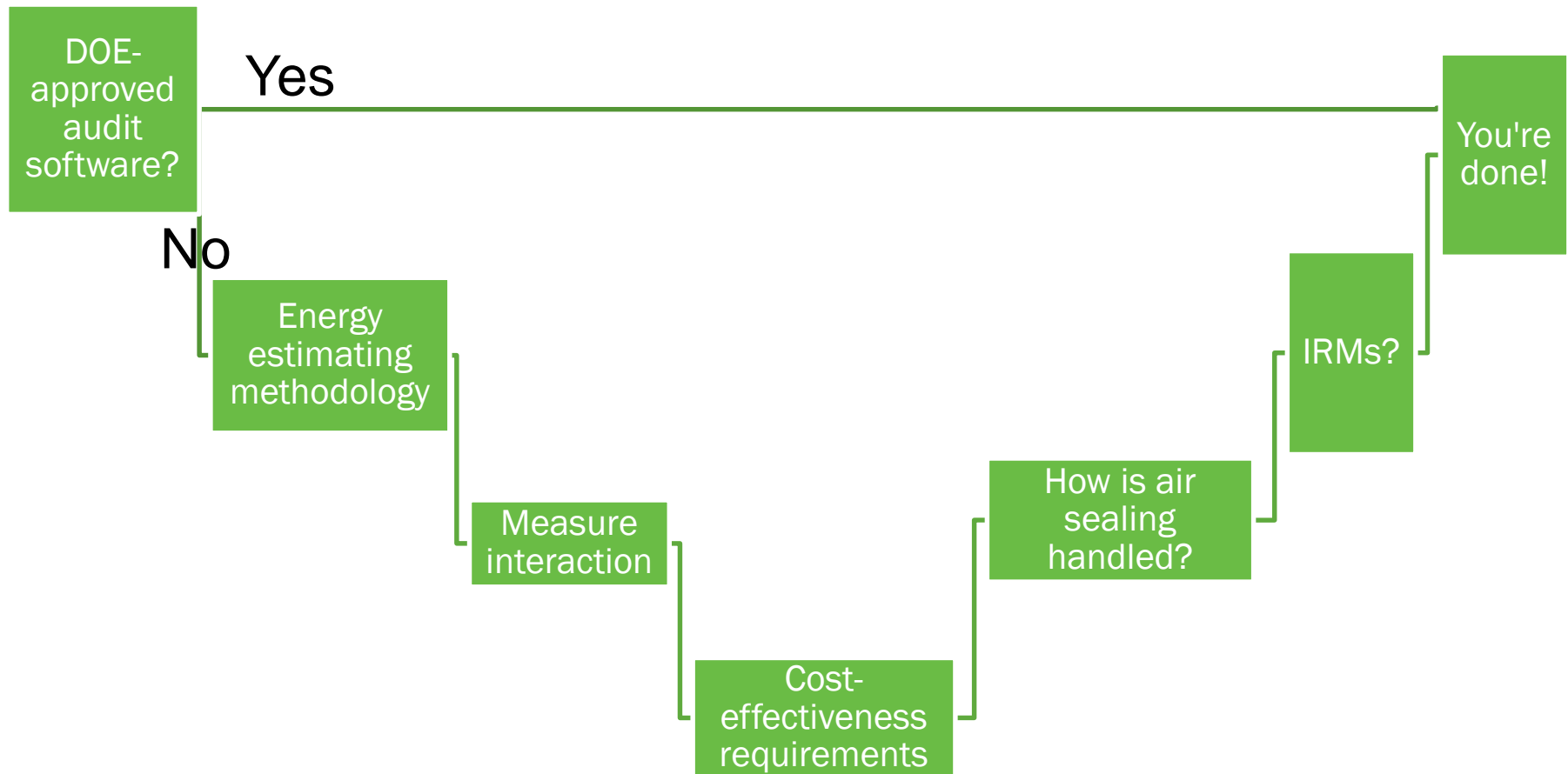
1. $SIR \geq 1.0$

2. H&S

Where SIR = Savings to Investment Ratio of each Energy Conservation Measure (ECM) and total project ECMs

H&S = The Health and Safety of clients and WAP workers

WPN 16-8: Step by Step #1



WPN 16-8: Step by Step #2

Weatherization Measures Considered

- **List of ECMs + H&S Measures “enabled” in audit**
- **Material and Labor Costs for each measure**
 - For typical subgrantee that is representative of state/territory
 - Averaged for state is acceptable
- **Lifetime of each measure**
 - NEAT/MHEA defaults – good place to start
 - Longer lifetimes are good if justified



WPN 16-8: Step by Step #3

Sample Audits

- **10 audits of each type of building**
 - 10 SF + 10 MH (+ 10 MF)
 - Substitute a couple 1-4 unit buildings for SF if applicable
- **Input data & Assumptions**
 - Field assessments including notes and diagnostic test results
 - Audit Input Report or equivalent
- **Recommended Measures**
 - w/SIRs, listed in order of decreasing SIR + total job SIR
 - Incidental repair costs

Sample Audit Non-Starters

$$SIR \geq 1.0.$$

If anything violates that...



**You got some
'splainin' to do!**

Sample Audit Non-Starters - 1

- SIR above 10 for anything besides General Heat Waste (GHW) measures...
- SIR = 0.999 or lower. No, SIR = 1 is generous
- HVAC replacement SIR > 4+
- Window replacement SIR > 2.5 in SF or MH
 - Replacement of double-glazed window
 - Any window replacement as H&S
- No – or incomplete – blower door testing
- 2-part audits, e.g. separate audit just for HVAC
- No HVAC diagnostics

**You got
some
'splainin'
to do!**



Sample Audit Non-Starters - 2

- No or incomplete combustion safety testing
- Audit model missing windows or other significant building feature
- Not specifying wall type
- Not checking 'Evaluate All' almost always!
- Inadequate air sealing

Rules of thumb:

- Generally good post-wx blower door reading:
 - [conditioned area + 400] cfm50
- Bad post-wx blower door reading:
 - [2x conditioned area] cfm50 or more

**You got
some
'splainin'
to do!**



Sample Audit Non-Starters - 3

Won't pass a reality check, i.e., only work in alternate universe...

**You got
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'splainin'
to do!**

- Recommended measures will save more energy than the house used the previous year. True example: predicted savings of \$13,800 per year on a 985sf house where previous energy bills were \$1,050 per year
False example: Insulate 1 door, save \$11,335 per year! Energy savings of 40% without replacing HVAC and without significant air sealing.
- Need (per ASHRAE 62.2?) to add 2 bath fans to a 1,000sf house that already has a range hood



Sample Audit Non-Starters - Insulation

- No – or minimal – existing insulation in ceiling but not evaluating added insulation
- No – or minimal – existing insulation in walls but not evaluating added insulation
- Inputting existing 4” insulation in 2x4 walls...c
- Input existing R-10 when you mean 10” (R-35) existing insulation
- Specified level of insulation in an open attic. Why not let the audit optimize the R-value?
- Not evaluating floor insulation, esp. in MHs

**You got
some
'splainin'
to do!**



WPN 16-8: Step by Step #4

Field Procedures

- **Audit procedures and field protocols**
 - Copy of Field Guide and Installation or Technical Standards, or auditor's or field operations manual...varies by Grantee
- **Weatherization Measures installed**
 - Statement that only materials that meet or exceed the standards in Appendix A will be installed

WPN 16-8: Step by Step #5

10 CFR 440.21(g) – General Heat Waste (GHW) reduction

- **WAP Guidance lists materials that DOE has determined to be generally cost-effective**
 - Water heater wrap
 - DHW pipe insulation
 - Low-flow shower heads
 - Faucet aerators
 - Limited caulk and weather-stripping
 - Furnace/AC filters

WPN 16-8: Step by Step #6

Priority Lists are allowed Per 10 CFR 440.21(f)

- **For similar dwelling units without unusual energy-consumption characteristics**
- **Developed by conducting site-specific energy audits of a representative subset**

More on Priority Lists

- **How was priority list developed?**
 - Specifically, what buildings do the priority lists apply to?
 - What circumstances will require site-specific audits rather than the priority list?
 - Don't forget to include allowable Incidental Repair \$ limits
- **ECMs and ECM ranking on a PL are determined by the cost of energy and cost to provide and install the ECMs. Those costs change.**

WPN 16-8 advises Grantees to “at least annually review and as necessary the measure costs and fuel prices that the energy audit software or manual methods use to estimate cost-effectiveness.”

Energy Audits – Where to Learn More

- **WPN 16-8 and Attachments**
 - Attachment 1 describes the information Grantees must submit and evaluation criteria
 - Attachment 2 describes what information the Grantee must submit for priority list, and evaluation criteria DOE will use to approve priority lists.
 - Attachments 3 and 4 list nationally approved and single-Grantee approved energy audit tools, respectively, and for which building types.
 - Attachment 5 provides guidance on fuel switching.

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Quality Work Plan

WPN 15-4:

1. Define the work
2. Communicate
3. Train
4. Inspect

Quality Work Plan – Define & Communicate

Field Guides:

Get everyone on the same page



What you need to know

- Update team
- Update schedule
- SWS alignment
- Variance Requests



Field Guides – Update Team

- Who is on your team?
 - You do want...
 - You don't want...



Field Guides – Update Schedule

- Required – Every 3 years
- When is yours due?
- How long will it take?



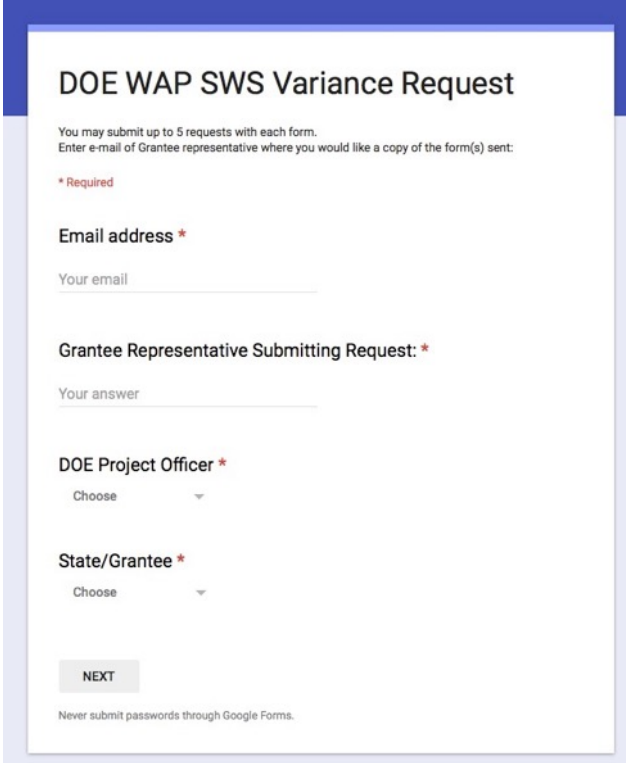
Field Guides – SWS and Variance Requests

A conundrum:

- Field guides must align with the SWS (WPN 15-4)
- Sometimes the SWS don't work for you

The solution:

- Submit a Variance Request



The screenshot shows a Google Form titled "DOE WAP SWS Variance Request". The form includes instructions: "You may submit up to 5 requests with each form. Enter e-mail of Grantee representative where you would like a copy of the form(s) sent:". It features several required fields marked with a red asterisk: "Email address" (with a text input field labeled "Your email"), "Grantee Representative Submitting Request" (with a text input field labeled "Your answer"), "DOE Project Officer" (with a dropdown menu labeled "Choose"), and "State/Grantee" (with a dropdown menu labeled "Choose"). At the bottom, there is a "NEXT" button and a footer note: "Never submit passwords through Google Forms."

Variance Requests – Tips for Approval

- Get the justification right
- Double check the details
- Be clear and concise
- Be specific

New form available here:

<https://goo.gl/forms/GeLNgwYWEgK2aNup2>

Field Guide Review Process



Field Guides – Where to Learn More

- WPN 15-4, Sections 1 & 2 – Describe SWS alignment and distribution requirements
- State Plan section V.5.1 – Technical Guides and Materials
- EERE site – Training Resources:
<https://energy.gov/eere/wipo/downloads/training-resources>
 - SWS tool navigation training
 - Field Guide and Variance Request Review Process webinars
- SWS - <https://sws.nrel.gov>
- New Variance Request form:
 - <https://goo.gl/forms/GeLNgwYWEgK2aNup2>

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Training in WPN 15-4

Section 3 – Inspection and Monitoring

- Grantees must develop a training plan to ensure that there are sufficient certified individuals available to meet the requirements of this Section.

Training in WPN 15-4

Section 4 – Provide Training to Implement Standards

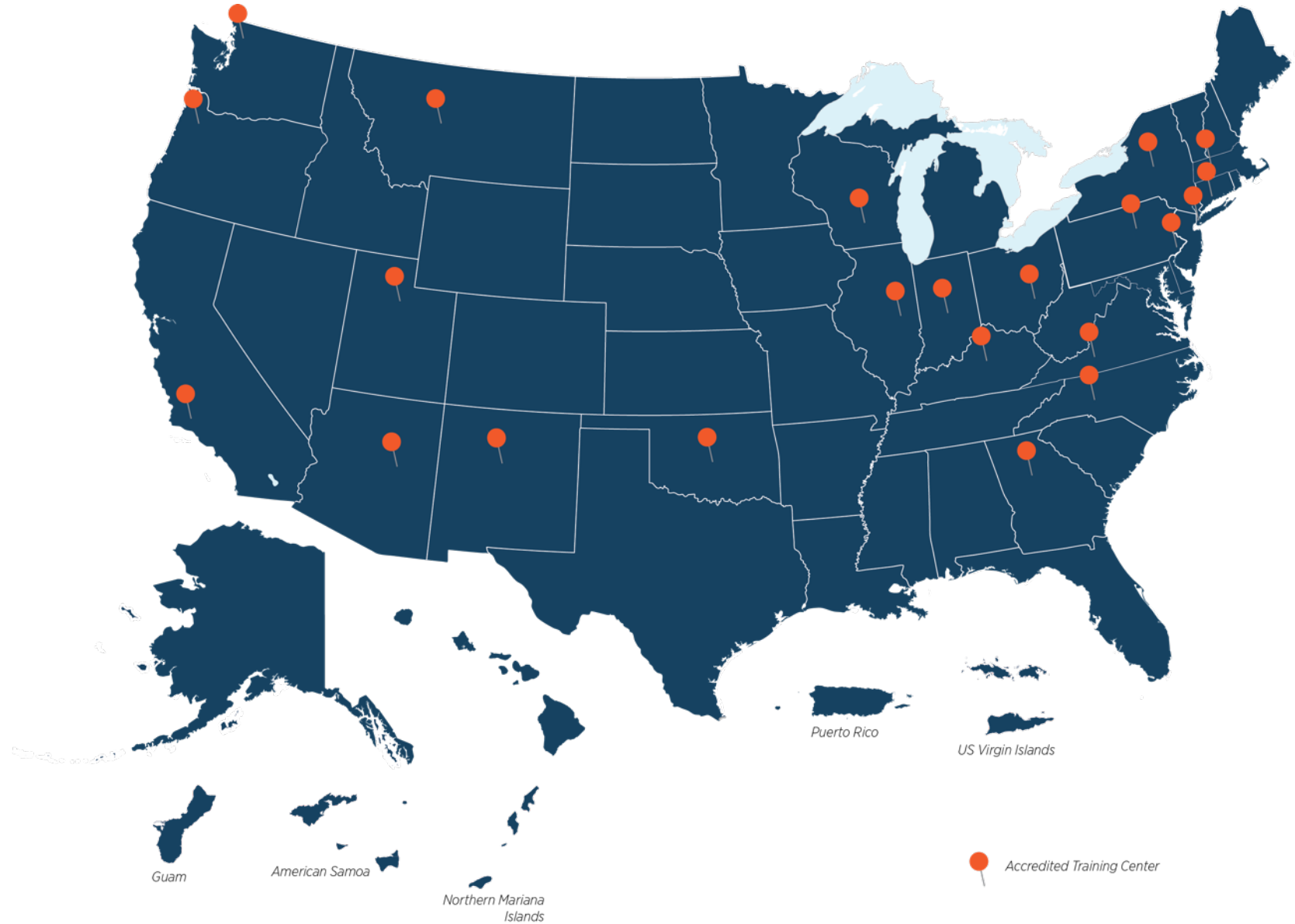
- Beginning in Program Year 2014, Grantee training plans must include comprehensive training for all WAP workers that is aligned with the NREL (JTA) for the position in which the worker is employed.

Training – Value of Accredited Centers

- Facilities
- Trainer qualifications
- Curriculum review
- Continual improvement
- Course evaluations
- And much more



Accredited Training Centers



Training Center Accreditation – Where to Learn More

- WPN 15-4, Sections 3 & 4 – Describe training plan requirements
- State Plan section V.8.4 – Training & Technical Assistance
- Sortable list of accredited centers:
 - <https://irecusa.org/credentialing/credential-holders/>
- Learn more about accreditation:
 - <https://irecusa.org/credentialing/accreditation/training-providers/>
- JTAs that accredited plans must align with:
 - <https://energy.gov/eere/wipo/guidelines-home-energy-professionals-accredited-training#jta>

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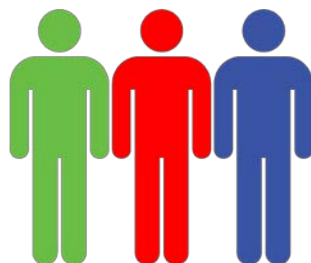
Certifications

- **4 HEP Certifications available:**
 - Retrofit Installer/Technician (RIT)
 - Crew Leader (CL)
 - Energy Auditor (EA)
 - Quality Control inspector (QCI)
- **1 HEP Certification federally required:**
 - Quality Control Inspector (QCI)



Certification vs. Accreditation

Certification is for people:



Accreditation is for Programs or Providers:



You CAN have one without the other.

HEP Certifications – Where to Learn More

- **BPI - <http://bpi.org/certified-professionals>**
 - Includes application forms, prerequisites, exam fees, certification scheme handbooks, exam prep tips, and more, for each certification.
- **JTAs that certifications are built on:**
 - <https://energy.gov/eere/wipo/guidelines-home-energy-professionals-accredited-training#jta>
- **DOE WAP Standardized Training Curricula aligned with JTAs (2.0 versions):**
 - <http://www.waptac.org/Training-Tools/WAP-Standardized-Curricula.aspx>

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- Energy Audits and Priority Lists
- Field Guides
- Training
- **Certifications**
- **Inspections & Monitoring**

Inspections & Monitoring

We've defined the work, now hold everyone to it.



Inspection & Monitoring Forms

- Do they align with SWS?
- Do they align with work orders?
- Do they account for missed opportunities?
- How often are they updated?
 - By whom?



Inspection...then what?

- **What's the policy for when monitors find:**
 - Subpar work?
 - Subpar final inspections?
 - Incomplete work in units reported as complete?
 - Inaccurate energy audits?
- **What is the policy when an agency just isn't performing?**

Inspection...then what?

Avoid “heat of the moment” decisions.



Inspections & Monitoring – Where to Learn More

- WPN 16-4 – Monitoring Guidance
- WPN 15-4, Section 3 – Inspection & Monitoring
- WPN 13-4 – Clarifies regulations around property acquired by Grant \$
- State Plan section V.5.3 – Inspections
- State Plan section V.8.3 – Monitoring
- Annual Grant Guidance (XX-1)
- DOE WAP Standardized Curricula module: Quality Control Inspector 2.0:
 - <http://waptac.org/WAP-Standardized-Curricula/Quality-Control-Inspector-2.0.aspx>

Resource Review

- All WPNs (Guidance) referenced is available here:
- <https://energy.gov/eere/wipo/weatherization-program-guidance>
 - Sortable by topic
 - Active vs. Inactive

The screenshot displays the 'Weatherization Program Guidance' page on the Energy.gov website. The page features a search bar and a list of documents with columns for Description, Effective Date, Topic, and Type. The documents listed include various memorandums and notices related to the Weatherization Assistance Program (WAP), such as training funds, grant guidance, and eligibility criteria.

DESCRIPTION	EFFECTIVE DATE	TOPIC	TYPE
WAP Memorandum 031: Allowable Use of Training Funds for the 2018 National Home Performance Conference and Trade Show. The 2018 National Home Performance Conference and Trade Show is being held April 12-16, 2018, in Indianapolis, IN. The national conference, featuring the nation's top experts in home performance and weatherization, provides an opportunity for all sectors of the residential and commercial energy efficiency industry to advance the profession and the impact of DOE Weatherization Assistance Program (WAP) assistance at this event is considered an important use of training and technical assistance (T&TA) funds by WAP network organizations.	2/12/2018	Unclassified	Active Memorandums
WAP Memorandum 030: Allowable Use of Training Funds for Energy Outreach 2018. The 2018 Energy Outreach Conference is being held May 21-23, 2018, at the Arizona Grand Hotel in Phoenix, Arizona.	2/6/2018	Unclassified	Active Memorandums
WPN 18-0: Program Year 2018 Weatherization Grant Guidance. To issue grant guidance and management information for the weatherization assistance program for program year 2018 based on the following documents.	12/8/2017	Unclassified	Active Program Notices
WAP Memorandum 029: Field Guide Expiration Reminder for WAP Grantees. The U.S. Department of Energy (DOE) implemented the weatherization assistance program (WAP) field guide requirements and implementation guidance for the 2018 program year starting January 1, 2018. The field guide is a key document in the WAP program and addresses all the work done to complete WAP with the Standard Work Specifications (SWS).	12/5/2017	Unclassified	Active Memorandums
WAP Memorandum 028: Allowable Use of Training Funds for the 2018 NASCOP 2018 Winter Conference. The U.S. Department of Energy's Weatherization Assistance Program (WAP) is pleased to announce that WAP grantees are invited to attend the 2018 NASCOP Association for State Community Service Engineers (NASCOP) Winter Conference, scheduled for Feb. 28 - March 2, 2018, in Arlington, VA.	12/5/2017	Unclassified	Active Memorandums
WAP Memorandum 027: FY 2018 Weatherization Assistance Program Grant Guidance. To aid grantees in development and submission of FY 2018 state plans.	10/26/2017	Unclassified	Active Memorandums
WPN 17-2: Weatherization Health and Safety Guidance. To clarify, update and provide additional information and safety information for the installation of weatherization measures.	8/9/2017	Health & Safety	Active Program Notices
WPN Notice 17-0: Property Acquired Under the Weatherization Assistance Program Including Vehicle and Equipment Purchases. To provide grantees with guidance on property and vehicle purchases under the WAP program, including the use of the WAP's purchasing vehicle and equipment.	3/27/2017	Unclassified	Active Program Notices
WPN Notice 17-0: Closeout Procedures for Grants Under the Weatherization Assistance Program. To provide guidance to grantees for closeout of grants funded under WAP.	2/27/2017	Unclassified	Active Program Notices
WPN 17-04: Program Year 2017 Grantee Allocations - Review. To provide revised grantee allocations for the preparation and submission of applications for funding of WAP for program year 2017.	10/3/2017	Funding Grants Application	Active Program Notices

Resource Review

Energy Audits

- WPN 16-8 and Attachments

Field Guides

- WPN 15-4, Sections 1 & 2
- State Plan section V.5.1
- <https://energy.gov/eere/wipo/downloads/training-resources>
 - SWS tool navigation training
 - Field Guide and Variance Request Process
- SWS on-line tool: <https://sws.nrel.gov>
- New Variance Request form:
 - <https://goo.gl/forms/GeLNgwYWEgK2aNup2>

Training Accreditation:

- WPN 15-4, Sections 3 & 4
- State Plan section V.8.4
- Sortable list of accredited centers:
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- Learn more about accreditation:
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- JTAs <https://energy.gov/eere/wipo/guidelines-home-energy-professionals-accredited-training#ita>

Resource Review

HEP Certifications

- BPI - <http://bpi.org/certified-professionals>
- JTAs <https://energy.gov/eere/wipo/guidelines-home-energy-professionals-accredited-training#jta>
- DOE WAP Standardized Training Curricula
<http://www.waptac.org/Training-Tools/WAP-Standardized-Curricula.aspx>

Inspections and Monitoring:

- WPN 16-4
- WPN 15-4, Section 3
- WPN 13-4
- State Plan section V.5.3
- State Plan section V.8.3
- Annual Grant Guidance (XX-1)
- DOE WAP Standardized Curricula module: Quality Control Inspector 2.0:
 - <http://waptac.org/WAP-Standardized-Curricula/Quality-Control-Inspector-2.0.aspx>

Summary

- **Energy Audits and Priority Lists**
- **Field Guides**
- **Training**
- **Certifications**
- **Inspections & Monitoring**

Questions?

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