# Energy Audit Software

# Weatherization Energy Auditor Single Family

**Learning Objectives**

By attending this session, participants will be able to:

* Recognize Appendix A of the DOE WAP Rule 10 CFR, Part 440, as a resource for materials selection.
* Describe DOE requirements for energy audit software.
* Locate DOE guidance related to energy audits and priority lists.
* Operate NEAT energy audit software for single-family homes.

**Key Terminology**

Appendix A

Energy audit

Manufactured Home Energy Audit (MHEA)

National Energy Audit Tool (NEAT)

Priority list

Savings-to-investment ratio (SIR)

Weatherization Program Notice (WPN) 01-4

Supplemental Materials

Handouts & Resources

Auditor Tool and Equipment List.

Energy Audit Data Collection Form.

Energy Audit Software Quiz.

Energy Audit Software Quiz Answer Key.

NEAT Training Outline.

Oak Ridge National Laboratory. “Weatherization Assistance Training.” <http://weatherizationassistanttraining.org/>

Oak Ridge National Laboratory. “Weatherization Assistant User Manual.” <http://www.waptac.org/Weatherization-Assistant/Weatherization-Assistant-Manuals.aspx>

U.S. Department of Energy. Weatherization Assistance Program. "Weatherization Assistant." Energy Audit Software. <www.waptac.org>.

U.S. Department of Energy. Weatherization Assistance Program. “WPN 01-4 Revised Weatherization Energy Audit Approval Procedures.”

U.S. Department of Energy, Code of Federal Regulations, Title 10 – Energy, Part 440 –  
Weatherization Assistance for Low-Income Persons (10 CFR 440), Appendix A. <<http://www.waptac.org/Rules-and-Regulations/Federal-Regulations.aspx>>.

U.S. Department of Energy. “Weatherization Assistant Training.” <www.weatherizationassistanttraining.org>

Classroom Activities

Each student should have access to a computer preloaded with NEAT or other common audit software. Using the “NEAT Audit Training Outline” (located in the resource section) as a guide, conduct a live and interactive demonstration of the NEAT audit software. Students should be provided with or bring their own portable laptop computers with the NEAT software installed.

The following major topics are covered:

* The features of DOE’s “Weatherization Assistant,” which contains both single family audit (NEAT) and mobile home audit (MHEA)
* Downloading and updates
* Agency, client, and library setups
* Data collection, data input, and in-field forms
* Reports

**Class Overview**

* This two-day training is designed to offer a comprehensive overview on how to use the NEAT energy audit software for single-family homes. Begin the session with an overview highlighting the objectives, agenda, and expectations. Lead off with the PowerPoint presentation. This is both a review of the federal rules and guidance pertaining to the selection of weatherization measures and an overview of NEAT and other energy modeling software.
* Note that the training outline referenced above under “Classroom Activities” specifies an on-site visit to a real home. Hand out the “Energy Audit Data Collection Form” and explain data collection needs to them prior to the home visit. Armed with forms, students will be expected to gather house data and enter that data into NEAT on Day 2. Diagnostic tests will have to be performed on site; information needs to be gathered on the insulation levels, dimensions, exposure, and mechanical and base load characteristics. Required tests include blower door and pressure pan testing, refrigerator metering, and combustion appliance testing. See “Auditor Tool and Equipment List” in the resource section for equipment needed for the home visit.
* Upon return to the classroom on Day 2, demonstrate the features of the software and go through the input screens of an audit form completed on the previous day. Encourage students to follow along as data entries are projected in the front of the classroom. If possible, have an assistant patrol the classroom to help students keep pace with the lead instructor on their own computers. Continually assess the understanding of your audience; progress at comfortable speed so students can follow.
* Interact with the audit and show the report screens, paying particular attention to existing conditions and energy upgrade recommendations based on favorable SIRs shown in the report section. Show how users may change preferences in the setup functions to change variables, such as weather stations, fuel costs, material/labor costs, candidate measures, lifetime of measure, etc. Make some changes on selected items, such as fuel or material costs and weather stations. Using the data collected during the home visit, show how changes in those variables impact the SIR and savings after running the audit with those incorporated changes.
* The instructor should be experienced and sufficiently competent with the Weatherization Assistant software to be able to demonstrate it effectively. A good place to start would be to take the Web-based training titled “Weatherization Assistance Training” offered by Oak Ridge National Lab <http://weatherizationassistanttraining.org/>. Also, look for the latest user manuals available on WAPTAC at <http://www.waptac.org/Weatherization-Assistant/Weatherization-Assistant-Manuals.aspx>.
* Follow up with hands-on training if possible. It is highly recommended to follow up with employers with on-the-job training involving practice with data inputs, audit runs, and report interpretation based on audits of real homes.
* It is recommended that the module titled “Measure Selection Guidelines” be taken as a prerequisite to this module.