

Weatherization Assistant Update History

Updated: February 20, 2012

Version 8.9.0.5 (Issued February 10, 2012)

General

- The 2011 fuel escalation rates were installed.
- The Leadville, CO weather station, with high altitude (12,000 ft) Colorado weather characteristics, was added.
- The Input Summary and Data Collection forms were updated.
- The default Agency Contacts, “Admin, Your” and “Auditor, Your” were eliminated.
- Additional traps for error messages (e.g., Errors 3075, 3218) were implemented to prevent disruption of program execution.
- Several changes were made to speed up processes in databases with large numbers of clients.
- The Agency Survey Copy feature was corrected.

NEAT and MHEA

- The limitation on the amount of infiltration that could be attributed to the windows in a home was made less stringent. The maximum percentage was increased from 20% to 50%.
- The Tune-up measure was eliminated for space heaters.
- A problem hindering entry of billing data was eliminated.
- “Memory Leaks” were identified in the programming of the NEAT and MHEA engine coding. Their elimination may reduce the frequency of miscellaneous error messages received while executing the audits.

NEAT

- The existing wall insulation type of “Rockwool” is now seen as batt insulation rather than loose fill.
- An “Include in SIR” checkbox has been added to the Windows form when “Replace with Low-E” is selected as the Retrofit Option.
- The area associated with the window film material was increased to better represent the amount actually needed to install the films, as prescribed by window film industry representatives.
- A problem with the interactive effects between the sun screens and window replacement measures, possibly producing inconsistent entries for these measures between the Recommended Measures and the Material listings in the Recommended Measures Report, was corrected.
- A “Leakiness” dropdown box was added to the Doors form allowing the user to estimate the air leakage characteristics of a door. Menu options are “Tight,” “Medium,” and “Loose.”
- A door replacement measure was added to NEAT. The measure includes an estimate of the savings associated with reduction in air leakage through the door, based on the user’s selection of the existing door’s “Leakiness.”
- A “Replacement Door Required” checkbox was added to the Door form allowing the user to specify that door replacement is mandatory.

- If the user has specified that door replacement is required, an “Include in SIR” checkbox appears on the Door form.
- An “Additional Cost (\$/door)” field was added to the Door form allowing the user to adjust the cost of door replacement.
- A “Roof Color” field was added to the Attic forms. Options are “White, Reflective, or Shaded” and “Normal or Weathered.”
- A white roof coating measure was added. It is evaluated if the “Roof Color” is declared “Normal or Weathered.”
- Incorrect costs for high levels of added attic insulation (R-49 and higher) when the “Added R Value” or “Max. Depth” fields on the Attic forms were used was corrected.
- The levels of insulation that will be evaluated for addition to a floor are restricted to those that fit within the joists.
- The billing data adjusted annual dollar savings and SIR for the heating system replacement measure was corrected.
- A possible conflict in declaring mandatory replacement of both an existing heat pump and existing AC unit was resolved.
- Executing NEAT when declaring installation of a heat pump mandatory but with no existing air-conditioning produced an “Exit Code 10” error message. This problem was corrected.
- A fossil-fueled secondary heating system will not be eliminated with replacement of a primary system by a heat pump.
- If an air-conditioner replacement was declared required but the SIR of the replacement was less than the Minimum Acceptable SIR, the measure would be recommended but the Material listing in the Recommended Measure Report would be missing. This problem was corrected.
- If a water heater replacement was declared required but the SIR of the replacement was less than the Minimum Acceptable SIR, the measure would be recommended but the Material listing in the Recommended Measure Report would be missing. This problem was corrected.
- Two problems with the tank insulation measure were corrected: (1) a tank insulation material entry could be displayed in the Material listing in the Recommended Measure Report without the measure being recommended and (2) the mutual exclusiveness between the tank insulation measure and water heater replacement measure was not always being enforced.
- A problem that prevented furnace replacement and IID installation as mutually exclusive measures was corrected.
- A problem that prevented furnace replacement and furnace tune-up as mutually exclusive measures was corrected.
- Measures whose ranking fell after a heating system replacement which involved switching from one fossil fuel to another had dollar savings and SIR which didn’t reflect the fuel switch. This was corrected.
- Modeling of a heat pump water heater was improved. Cost effectiveness of replacing an existing electric resistance unit with a heat pump unit will generally be less following this change.
- The dependence of the duct sealing measure on the un-insulated duct area was removed.
- The aggregated SIR for multiple window replacements displayed in the Recommended Measure Report was corrected. This most often will reduce this value, possibly reducing the number of window replacements recommended.

- The Material entry in the Recommended Measure Report for the User-Specified Ceiling R measure would not be displayed unless the measure's SIR was above the minimum. Since this measure is considered mandatory, the material listing was made to appear regardless of the measure's SIR.
- The text "(not used)" associated with the material listing for a heating system replacement in the Recommended Measure Report was eliminated.
- Sizing contributions from sliding glass doors were modified. Additional corrections for the sizing contributions of windows and their associated measures were performed.

MHEA

- An error requiring the "Type" under the "Original Tank Insulation" data block on the Baseloads Water Heating form to be selected in order for the tank insulation measure to be evaluated was corrected. This field is not required if the "R Value" field is specified.
- The Additional Cost entry on the Floor form for the mobile home proper was also being added to the cost of adding floor insulation to the Addition. This was corrected.
- Spurious results could be obtained from the program if a wood burning heating system was present and that system was recommended to be tuned-up. The Tune-up measure was eliminated for wood burning heating systems.
- The checkboxes for "Tune-up Mandatory" and the associated "Include in SIR" on the Primary Heating were eliminated for heating systems with Equipment Type "Space Heater" or if the Fuel is selected as "Wood." The program ignored these inputs under these situations.
- The program could give erroneous results for replacement of a heating system when characteristics of the existing and replacement systems and fuels differed dramatically (e.g., for replacement of a wood burning system by a heat pump). The problem was corrected.
- The post-retrofit component sizing contributions were corrected.

Version 8.6.0.4 (Issued November 9, 2009)

General

- The following parameters associated with the NEAT window film retrofit measure were modified in the Setup Library Key Parameters form and Library Measures form: Retrofit Window Film Surface Emittance from 0.90 to 0.84, Retrofit Window Film Solar Heat Gain Coefficient from 0.50 to 0.49, Lifetime from 5 to 15 years, Material cost from \$3.00/ft² to \$1.00/ft², and Labor cost from \$1.00/ft² to \$3.00/ft².
- The Weatherization Assistant installer routine was modified so that an update from Version 8.6.0.3 to Version 8.6.0.4 would enter the new window film retrofit measure parameters into the existing Setup Library.
- A Supply Library Summary report was added to the Supply Library that prints out all the items entered in the Supply Library that have an inventory indicated.
- The ability to cancel an import when importing a record that already exists in the database was added to the Data Link feature.
- A problem with user-defined NEAT Insulation Types being lost when a Setup Library was imported from a previous versions was corrected.

- A problem with material and labor details associated with measures in a work order being lost when the work order was imported from Version 8.4 into Version 8.6 was corrected.
- A problem with a date range being requested when a Work Order Report was selected was corrected.
- A problem with an unhandled error occurring when the References button was selected in the Setup Library and Supply Library for an undefined record was corrected.

NEAT and MHEA

- A problem occurring when a new lighting record was created on the Lighting form (possibly only after an audit had already been run) was corrected.

NEAT

- The “Perimeter to Insulate” field found in the Sill block of data on the Foundations form was allowed to accept a value of 0.
- A problem with a mandatory measure being included in the whole house (or cumulative) SIR calculation even though the Include in SIR checkbox associated with the measure was not checked was corrected.
- A problem with the Cumulative SIR field included in the Economic Summary data block on the Audit Information form including a mandatory measure that was not suppose to be included in the whole house (or cumulative) SIR calculation was corrected.
- A problem with the cooling savings being inaccurately calculated for the air conditioner replacement measure and other measures with an SIR less than the air conditioner replacement measure when the existing air conditioning equipment did not cool the entire house was corrected.
- A problem with the energy savings calculated for a mandatory replacement of a double-pane window with a double-pane, low-e window being zero was corrected.

MHEA

- A problem occurring when a new window record was created on the Window form (possibly only after an audit had already been run) was corrected.
- A problem with an efficiency needing to be entered in the Replacement Heating form even if a replacement unit was not desired was corrected.

Version 8.6.0.3 (Issued September 18, 2009)

General

- The Help feature was modified to be compatible with Vista and to include an index and table of contents.
- An optional password protection feature was provided when the database file (mdb, wdz) method of importing and exporting clients is used.
- A button was added to all the status editor forms that allows the current status to be cleared.

- The ability to reassign references to records when references are deleted was provided (e.g., when a setup library is deleted, audits that referenced that setup library can now be reassigned to another setup library).
- The Manufacturer and Model fields on the Refrigerator and Water Heater forms found in the Supply Library were made to be mandatory fields so that appropriate information would be displayed when drop-down boxes for replacement units are selected in NEAT and MHEA.
- A problem with the material quantities entered for a user defined measure not being brought forward when a setup library from an earlier version was imported into a newer version was corrected.

NEAT and MHEA

- A field was added to the water heater form that allow replacements to be designated as mandatory.
- A Delete button that clears all the entries on a form was added to those forms that previously required highlighting a large vertical bar to the left of the form to clear all the form's entries.
- A problem in the ordering of measures on the Recommended Measures report when only two measures were recommended was corrected.
- A problem with the "In Stock" value listed for a material under the "Copy Supply" drop down box in the Materials/Labor Details subform of a work order being the number purchased rather than the number available was corrected.

NEAT

- Fields were added to the cooling equipment form that allow a tune up or a replacement to be designated as mandatory.
- Fields were added to the Key Parameters/Windows form in the Setup Library that allow the characteristics of window films added to windows as a retrofit measure to be specified.
- A problem with installation of water heater tank insulation being recommended when a water heater wrap is already installed was corrected.

MHEA

- A separate cooling equipment replacement form was developed that allows the characteristics and costs of the replacement unit to be specified and the replacement unit to be designated as a mandatory measure.
- A field was added to the primary cooling system form that allows a mandatory tune up to be specified.
- A problem which had allowed windows entered on the Shell/Windows form and the Addition/Windows form to appear in the data sheet view of either form was corrected.

Version 8.5.0.0 (Issued May 13, 2009)

NEAT

- Fields were added to the Key Parameters/Windows form in the Setup Library that allow the thermal characteristics of replacement windows, replacement low-e windows, and retrofit

storm windows to be described, including the ability to describe the retrofit storm window as being low-e.

- The window retrofit options field was expanded to include a low-e replacement window as a mandatory measure option.

Version 8.4.1.4 (Issued January 30, 2009)

NEAT and MHEA

- A problem introduced in Version 8.4.1.0 with double clicking on a setup or supply library selected on the Audit Information form bringing you to the wrong library was corrected.
- An error introduced in Version 8.4.1.0 that occurred when you tried to rerun an audit immediately after changing the weather file or the setup or supply libraries on the Audit Information form was corrected.
- A problem with having to enter the heating fuel twice on the Water Heating Baseloads tab before the entry would be saved was corrected.

MHEA

- MHEA was modified so that it is fully operational under Vista.
- A problem introduced in Version 8.4.1.0 with the calculation of the SIR for lighting measures was corrected.

Version 8.4.1.1 (Issued December 9, 2008)

MHEA

- A problem introduced in Version 8.4.1.0 with incorrect values appearing in the three cumulative columns (Cost, Savings, and SIR) in the Energy Saving Measure Economics table of the Recommended Measure report was corrected.

Version 8.4.1.0 (Issued November 14, 2008)

General

- A “New” button has been included along with the existing “” button in the record navigation boxes of all the forms to open new blank records.
- Two “Account #” fields have been added to the Client Information form.
- The following entries in the Setup Library were updated: fuel costs, fuel price indices, selected NEAT key parameters (night setback, film coefficient, internal loads, and the input cooling SEER), and selected MHEA key parameters (thermostat setback, building component R-values, home leakiness values, free heat values, door U-values, window R-values, and water heater wrap R-value).
- In Preferences, the program cannot be restarted if any records are open.
- The reasonable and allowable ranges for all input fields were updated as needed.

- When importing or exporting a client and the audit(s) associated with that client, the transfer of the Agency information and the Setup and Supply Libraries assigned to the client and audits is now optional.

NEAT

- Several major modeling changes were made: gable ends were added to the modeling of unfinished attics, the slab-on-grade heat conduction model was changed, and the distribution of solar gains over time was altered.
- Improvements and updates were made to the algorithms and default values used to calculate the UA for the wall, floor, and ceiling.
- An “Include in SIR” check box has been added to the Windows and Heating forms to make the inclusion of mandatory window and heating system retrofit measures in the cumulative SIR calculation for the house optional.
- A “Window Type” field and an “Interior Shading” field were added to the Window form, (neither are currently used by the program and, thus, do not impact the recommendations).
- A problem on the Finished Attic form with two “Added Insulation Type” fields being displayed for kneewalls was corrected.
- An “Uninsulated Supply Ducts” button has been added to the Heating form in replacement of the three duct-related fields that allows three different rectangular and/or round uninsulated supply duct sections to be described.
- An “Evaluate None” option has been added to the Replacement System options on the Heating form that prevents all heating system replacement and tune-up retrofit measures from being evaluated or recommended for the specific house being audited.
- A calculation error associated with the “Year Manufactured” fields (formerly called the “Year Purchased” fields) on the Heating and Cooling form when a heat pump is being described have been corrected.
- A problem with the HSPF field on the Heating form (when a heat pump is being described) not being treated like a mandatory field was corrected.

MHEA

- MHEA’s energy saving predictions have been reduced so that they better agree with field monitored results. This was accomplished by increasing the internal loads assumed by the program (as entered in the setup library) and by making the following changes within the program: reduced the infiltration load by 25%, added an extra R-value of 1.0 to the primary envelope components (walls, ceiling, and floor), and reduced the energy saving estimates by 40% (i.e., multiplied the energy savings by a 0.6 correction factor).
- Modeling of the Addition Floor and Addition Roof were improved.
- Improvements and updates were made to the algorithms and default values used to calculate the UA for the wall, floor, and ceiling.
- An “Include in SIR” check box has been added to the Windows, Addition Windows, Doors, Addition Doors, and Heating Primary forms to make the inclusion of mandatory window, door, and tune-up retrofit measures in the cumulative SIR calculation for the house optional. The “Include in SIR” checkbox on the Heating Replacement form (formerly called the “Include Replacement Costs in Home Retrofit”) was programmed to work in the same manner as the other “Include in SIR” checkboxes.

- A “Frame Type” field has been added to the Window and Addition Window forms, although neither are currently used by the program and, thus, have no impact on the recommendations.
- An “Additional Cost” field has been added to the Door and Addition Door forms.
- “Programmable Thermostat” and “Tune-up Mandatory” checkboxes have been added to the Heating Primary form.

NEAT and MHEA

- Forms have been modified and fields have been edited to improve readability and ease of data input, and to make them more consistent between NEAT and MHEA.
- All “Additional Cost” fields were reviewed and programmed as needed to allow both positive and negative values (a cost to be added to or subtracted from the cost determined from the setup library, respectively).
- The HSPF for heat pumps and the SEER for heat pumps and central air conditioners are now modified by a climate correction factor within the program.
- Un-editable “Recovery Efficiency” fields are now shown on the Water Heating form for both the existing equipment and the replacement. These fields are automatically populated once a water heater is selected from the Weatherization Assistant’s library of manufacturers and models.

Version 8.3.3.11 (Issued May 19, 2008)

NEAT

- Costs for the Fill Ceiling Cavity measure, as printed on the Recommended Measures report, are now correctly listed under the Measures tab as well.
- The block of Added Insulation information on the Finished Attics tab is no longer removed from the form when “None” is chosen as the Added Insulation Type.
- A zero can no longer be entered for the Foundation Wall Height on the Foundations tab, which previously caused the program to crash.

Version 8.3.3.8 (Issued March 19, 2008)

General

- An intermittent problem that was introduced in Version 8.3.3.6 in the Setup Library with the Library Measures form not being displayed properly has been corrected.
- A problem that was introduced in Version 8.3.3.6 in Data Link with the Import/Export via Database Files data transfer method has been corrected.

MHEA

- The Addition Floor Type field is now filled in when an existing audit is copied.

Version 8.3.3.6 (Issued December 19, 2007)

General

- The Weatherization Assistant and NEAT can operate under Vista (and MHEA with conditions).
- The Weatherization Assistant opens with a window sized for 1024x768 resolution.
- Data sheet views are no longer persistent.
- There are an additional number of reports available in the data sheet view to facilitate exporting results to spreadsheets.

NEAT

- The wall stud depth is specified by the user.
- The installation of wall cavity insulation is evaluated even if the wall is already partially insulated with a batt, blanket, or rigid board insulation.
- R-49 is evaluated as a 5th insulation option for attics.
- R-38 is evaluated as a 4th insulation option for floors.
- The data input form for foundations is reformatted to clarify and simplify inputs.
- The floor joist size is specified by the user in evaluating sill insulation.
- The user can define up to six insulation types each for the attic, knee wall, exterior wall, floor, sill, and foundation wall.
- Fuel switching for fossil-fueled heating systems is allowed.
- Replacing an electric heating system with either electric resistance heaters or a heat pump is evaluated.
- The installation of a heat pump is evaluated when only existing window air conditioners exist or when no air conditioning system is presently installed.
- Kerosene heating systems are treated the same as oil heating systems.
- Space heaters can be replaced to eliminate secondary heating systems.
- The algorithm associated with replacing space heaters is fixed.

MHEA

- Window retrofit recommendations are based on individual window descriptions.
- Sealing (weatherizing) windows is evaluated as a 4th window retrofit option.
- The selection of window retrofit options is consistent with NEAT's approach.
- The space-heating system efficiency improvement from a tune-up is consistent with NEAT's (i.e., the efficiency improvement becomes less as the existing efficiency increases).
- Separate installation costs are entered for measures applied to the mobile home itself and to the additions on mobile homes.

NEAT and MHEA

- Assigning an auditor to an audit is no longer required.
- Drop-down fields having only one available selection are automatically filled in.
- The "Client ID" field is left blank when a new audit is created to reduce data entry errors.
- "Additional Cost" fields are available for each window retrofit option.

- The estimated energy consumption of the refrigerator can be viewed without having to evaluate a replacement unit.

Version 8.2.7.8 (Issued September 9, 2006)

General

- A report is provided which lists all the measure costs entered in the Setup Library.
- Different sections of the Input Report can be selected for printing.
- Problems associated with the following items have been corrected: client name missing from the Recommended Measure Report, changing the user-supplied logo used in output reports, the status history as seen on the Client Completion Report, designating user-defined measures as being applicable to NEAT and/or MHEA, and activating the password feature before any users with passwords have been entered.

NEAT

- The Rs/inch for user-defined wall and attic insulation types are displayed in the associated combo boxes.
- The algorithm relating the year an air conditioner was purchased to a default efficiency is updated.
- Problems associated with the following items have been corrected: loss of envelope measure recommendations when a space heater replacement is recommended, not evaluating user-defined wall insulation types for frame walls with existing insulation, incorrect window retrofit costs displayed on the Measures tab, the annual pre-weatherization energy consumption displayed on the Recommended Measure Report being too low when duct sealing is evaluated (representing consumption after duct sealing but before the installation of other recommended measures), and an incorrect annual post-weatherization energy consumption displayed on the Recommended Measure Report when a space heater replacement is recommended.

MHEA

- The algorithm relating the sum of the pressure pan readings to the duct leakage rate is modified.
- Window and door codes are listed on the Recommended Measures Report.
- The order that recommended measures are listed on the Recommended Measures Report are modified to be consistent with NEAT.
- Problems associated with the following items have been corrected: a door replacement not being evaluated unless a mandatory replacement is specified, and the post-weatherization annual consumption reported in the Recommended Measures Report when baseload measures are recommended.

Version 8.2.7.6 (Issued August 26, 2005)

General

- The Weatherization Assistant's optional administration features are introduced, including agency-related contact information, client data intake, recording of health and safety issues, recording of diagnostic measurements, work orders, status tracking, simplified cost accounting, inventory control, report generation, site mapping, and digital photo storage.
- Client information is entered separately from NEAT or MHEA.
- NEAT and MHEA share a common Setup Library.
- A Supply Library is introduced.
- Up to 65,000 characters can be entered in each comment field.
- Comments can be directly imported into work orders.

NEAT

- The user can enter a specific R-value of additional insulation to evaluate for the attic.
- A multiple number of finished attic components can be described.
- An "Additional Cost" field is available separately for foundation floor insulation and foundation wall insulation.
- A multiple number of space-heating systems can be described.
- Standard and high-efficiency replacement space-heating equipment can be described separately.
- Secondary space-heating systems can be replaced along with the primary space-heating system by a replacement unit.

MHEA

- The leakiness of individual windows is specified and used in estimating the energy savings from window retrofits (equivalent to NEAT).
- A distinction is made between existing floor insulation that is installed between the joists and under the joists.
- The data input form for the floors of additions is reformatted to allow a more accurate description.
- The length of the thermostat setback is based on the setback during the night rather than the day.

NEAT and MHEA

- Energy-efficiency and repair measures can be predefined and selected under the Itemized Cost tab.
- The data input form for refrigerators is reformatted to add data fields for the style and defrost mechanism for the existing and replacement units and to show the estimated energy consumption of the existing and replacement units.
- The algorithm for estimating the energy consumption of the existing refrigerator includes the location of the unit and the condition of the door seals.
- The database of refrigerators is expanded.
- The heat content of fuels and the uniform present worth factors are included in the Setup Library.