

State of Florida



# Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD  
TALLAHASSEE, FLORIDA 32399-0850

**-M-E-M-O-R-A-N-D-U-M-**

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**DATE:** March 20, 2017

**TO:** Carlotta S. Stauffer, Commission Clerk, Office of Commission Clerk

**FROM:** <sup>TT</sup> Takira T. Thompson, Engineering Specialist, Division of Engineering <sup>PoE</sup>

**RE:** Docket No. 150083-EG - Petition for approval of demand-side management plan of Duke Energy Florida, Inc.

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Please include the attached documents in the above mentioned docket file.

Thank you.

**DEF's Response to Staff's Fourth Data Request**

1. Please refer to Section 1.0 of the Program Standards. Please explain why it is necessary to redefine weatherization providers as Agencies.

**Response:**

To simplify the language in the document, the Department of Economic Opportunity (DEO) and local weatherization providers have collectively been defined as "Agencies" in Section 1.0 and throughout the remainder of the document the term "Agencies" is intended to reference both the DEO and other local weatherization providers.

- a. Please refer to goal 1 of this section. Here, the Department of Economic Opportunity (DEO) and local Agencies are referred to separately, whereas in section 2.0, it states "The eligibility requirements for LIWAP will align with the participating Agency's criteria or requirements ." Is DEO included in the term "Agency"? If so, would it be best to refer to DEO and local weatherization providers as "Agencies"?

**Response:**

Yes, the DEO is included in the term "Agency". We have revised the document as suggested by Staff. Please see Attachments B and C that are meant to replace the previously provided attachments.

2. Please refer to Section 2.1 of the Program Standards. Here it states, that Agencies may use DEF participating contractors. Can DEO use DEF's participating contractors?

**Response:**

Yes, DEO can use DEF's participating contractors.

- a. Please refer to number 1 of this section. Please explain why Agencies need licenses.

**Response:**

Any party, including an Agency, that installs weatherization measures needs to have the appropriate licenses. To clarify we have modified the language to state "Agencies and their agents". Please see Attachment C.

3. Please refer to Section 2.2 of the Program Standards. Please explain why "Weatherization Installation Standards of the U.S. Department of Energy" was removed from the list of guidelines to be met.

**Response:**

"Weatherization Standards of the U.S. Department of Energy" was removed from the program guidelines because those standards are only applicable to weatherization agencies that receive funding from the Department of Energy (DOE). In the past, all of the weatherization agencies that DEF partnered with through the LIWAP program received funding from the DOE and therefore the work they performed needed to meet DOE's Weatherization Standards. However, the proposed changes to the LIWAP program will allow DEF to partner with agencies who do not receive DOE funding and therefore the DOE standards are not applicable to those agencies.

4. Please refer to Section 5.1 of the Program Standards. Please explain why National Energy Audit Tool (NEAT) is not included as a part of the Participation Requirements.

**Response:**

The National Energy Audit Tool (NEAT) is not included as a Participation Requirement in Section 5.1 because the Tool cannot detect duct leakage. For homes with a central HVAC system, a duct blaster test is performed to determine duct leakage.

5. Please refer to Section 7.1 of the Program Standards. Please explain why there is not an audit requirement as a part of the Participation Requirements.

**Response:**

Please refer to the Heating and Cooling measures in Table 3.0. The audit requirement is included in the table in the column labeled "Additional Requirements".

**DUKE ENERGY FLORIDA, LLC**

**PROGRAM PARTICIPATION STANDARDS**

**LOW-INCOME WEATHERIZATION ASSISTANCE PROGRAM**

**DUKE ENERGY FLORIDA, LLC**  
**PROGRAM PARTICIPATION STANDARDS**  
**LOW-INCOME WEATHERIZATION ASSISTANCE PROGRAM**

**1.0 PROGRAM OVERVIEW**

Duke Energy Florida, LLC's (DEF) Low-income Weatherization Assistance Program (LIWAP) is a custom energy conservation program. Through its partnerships with local weatherization providers, DEF provides education about energy saving opportunities and installs energy efficiency measures in homes of qualifying low income customers. The LIWAP seeks to achieve the following goals:

1. Integrate DEF's LIWAP procedures with the Department of Economic Opportunity (DEO) and local weatherization providers (collectively referred to as "Agencies") to deliver energy efficiency measures to low-income families.
2. Identify and educate Agencies and low income customers about energy saving opportunities to upgrade their home's energy efficiency.
3. Increase low-income families' participation in DEF's DSM programs.
4. Minimize "lost opportunities" in the existing marketplace.

**2.0 ELIGIBILITY REQUIREMENTS**

The eligibility requirements for LIWAP will align with the participating Agency's criteria or requirements for participation in their low income services. Additional requirements are as follows:

- The residence must be in DEF's service area and be a residentially metered customer with an active account.
- All installations must be accessible for verification by a DEF representative.
- Homes must be greater than two years old.
- Homes having previously received DEF incentives for listed measures are not eligible for the same measure.

## 2.1 CONTRACTOR REQUIREMENTS

The Agencies are responsible for all work performed. Agencies may also use DEF participating contractors for attic insulation and duct testing/repair.

1. Agencies and their agents must have appropriate license(s) and comply with all appropriate federal, state, and local building and safety codes for all work performed.
2. All work performed must follow manufacturers' and DEF's specifications where applicable.
3. Agencies and their agents must correct any deficiencies found in the installation or materials identified by DEF.
4. Agencies shall indemnify and hold DEF harmless from any and all losses, liabilities, injuries, damages claims or costs whatsoever caused by items furnished or services rendered.
5. All DEF contractors shall indemnify and hold harmless DEF from any and all losses, liabilities, injuries, damages, claims or costs whatsoever caused by items furnished or services rendered.
6. DEF requires a minimum of the following insurance policies be in force by all participating contractors:
  - Workman's Compensation as required by law.
  - General Contractual and Automobile Bodily Injury Liability: \$100,000 per person and \$300,000 per occurrence.
  - General and Automobile Property Damage Liability: \$100,000 per occurrence.
  - General and Vehicle Liability policies endorsed: \$100,000 per occurrence to provide blanket coverage.

## **2.2 EQUIPMENT/MATERIALS AND INSTALLATION SPECIFICATIONS**

All materials and installation specifications shall meet or exceed the following guidelines:

- Equipment must meet manufacturers' specification and installation procedures.
- All work shall be performed to constitute a finished product.
- Materials shall be free of defects and covered under warranty for at least one year.
- Installation procedures must comply with all federal, state and local codes.
- All equipment installations must meet manufacturer's instructions and specifications. Any contractor failing to meet manufacturer's specifications and DEF procedures may result in termination of participation in any or all DEF programs.

## **2.3 AGENCY RESPONSIBILITY**

Agencies will be responsible for the following:

1. Qualify all participants using federal and state guidelines outlined in Section 2.
2. Follow the recommendations of the National Energy Audit Tool (NEAT), Agency assessment protocol or any DEF approved energy audit to determine eligible measures to be installed. Qualify and install measures by DEF's standards and procedures. All installations shall comply with DEF specifications (see Sections 4.2 through 10.2).
3. Provide DEF random access to the weatherized homes for program evaluation and inspection.
4. Deliver energy education to weatherization clients.
5. Invoice DEF for program approved installed measures on a monthly basis.

## **3.0 INCENTIVES AND ELIGIBLE MEASURES**

Duke Energy will provide incentives for the following measures with the stipulation that all requirements and minimum levels are achieved where applicable:

<b>Weatherization Measure</b>	<b>Minimum Measure Requirement</b>	<b>Maximum Incentive Amount</b>	<b>Additional Requirements</b>
Attic Insulation	Insulate homes with R5 or less to at least R-19 on residences with whole house electric air conditioning and/or electric heating	\$.50 per square foot up to a maximum of \$300 per home	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
Duct Leakage Test/ Repair	Repair Centrally Ducted Electric Heated and Cooled Systems	\$150	Completed Duct Test
Reduce Air Infiltration	Must demonstrate a minimum reduction of 1500 cfm at 50 pascals in electrically heated homes Not to exceed a minimum of 0.35 ACH	\$37.50	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
Electric Hot Water Reduction	Wrap electric water heater, insulate water pipes, lower temperature setting if needed, repair water leaks	\$20	Must be a recommendation of a NEAT or DEF-approved audit , or Agency assessment protocol
HVAC Maintenance	Tune up on Centrally Ducted Electric Heated and Cooled Systems	\$150	Must be a recommendation of a NEAT or DEF-approved audit , or Agency assessment protocol
High Efficiency Heat Pump Replacing a Heat Pump	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,000	Must be a recommendation of a NEAT or DEF-approved



High Efficiency Heat Pump Replacing Electric Resistance Heat	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,500	audit, or Agency assessment protocol. Incentive applicable on each new HP installed
Water Saving Showerheads	Maximum of 2.5 gallon per minute flow on homes with Electric Water Heaters	\$10 per showerhead	Maximum of 2 per home
Energy-efficient Light Bulbs	15 or 18 watt Compact Fluorescent replacing incandescent lamp greater than or equal to 60 watts 9 watt LED replacing incandescent lamp greater than or equal to 60 watts	\$3.00 per lamp \$4.50 per lamp	Maximum of 6 light bulbs per household
Faucet Aerators	Water Flow Reduction on homes with Electric Water Heaters	\$5 per Aerator	Maximum of 2 per household
Refrigerator	Must be Energy Star rated	\$400	1 per household

**Notes:**

1. In multi-family structures, DEF reserves the right to request bids from contractors to hold costs to a minimum.
2. Incentive amounts will be reviewed and compared to market prices annually and adjusted accordingly.

**4. CEILING INSULATION****4.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol.
3. The home must be at least two years old.
4. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.

5. The weighted average R-value of the existing insulation over the total attic square footage (above conditioned space) must be less than R-11.
6. Any structure that has utilized any of DEF's ceiling insulation programs is not eligible to participate again. However, if the structure, through an act of God, loses the insulation **and** the loss is **not** covered by insurance, the structure is eligible to participate a second time. It is the customer's responsibility to provide DEF with a letter from his/her insurance company stating that the insulation was not covered.
7. The total ceiling area to be insulated must be greater than 100 square feet.
8. Mobile homes built after January 1, 1977 will be assumed to have an insulation value in excess of R-11 and will not be eligible to participate in this part of the LIWAP program unless documentation is provided to DEF stating that the actual existing insulation value is less than R-12.
9. Any home with "Knob and Tube Wiring" that is energized is not eligible. (Refer to: National Electrical Code, Article 324, Section 324-4).

#### **4.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. The insulation must be installed in accordance with the manufacturer's recommendations and specifications.
2. All installations must result in an insulation value equal to or greater than R-19.
3. Flat roofs must have sufficient space to allow a minimum of 3 inches of air space above the insulation after insulation has been installed to the recommended R-value.
4. The insulation must be installed in the unconditioned space as a direct application to the attic area over the conditioned space.
5. The insulation must have a minimum clearance around all recessed lighting and gas-fired appliances as required by State, County and local codes.
6. The insulation must be installed uniformly, resulting in a minimum R-19 value throughout the entire area including knee walls. (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1.A.1 Walls Considered Ceiling Area).
7. All attic access panels that are located in conditioned space must be insulated with a minimum R-19 batt permanently attached.
8. Radiant barriers will not be allowed as a substitute in the LIWAP.

9. Ceilings with a rise greater than 5 and a run of 12 (5 over 12 pitch) shall not be insulated with blown-in (loose fill) insulation. Blown-in insulation shall not be used in attics where the distance from the top of the bottom chord of the truss or ceiling joist to the underside of the top chord of the trusses at the ridge is less than 30 inches and where obstructions to blown insulation exist (such as air conditioning ducts). (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1ABC.1.1 Ceilings With Blown-In Insulation).

#### **4.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. The contractor will supply to the customer, in writing the number of bags installed, and leave with the customer an empty bag or manufacturer's literature in order to determine the required density of the insulation.
3. The contractor will attach an R-value Certification Card signed by the insulation contractor or his representative to the attic joist visible from the attic access. The card shall contain, at a minimum, the following information:
  - Manufacturer's name
  - Insulation type
  - R-Value of insulation installed
  - Thickness of insulation installed
  - Location of insulation installed
  - Name and address of the contractor installing the insulation
  - Date of installation

#### **5. DUCT LEAKAGE REPAIR**

LIWAP duct repair is designed encourage weatherization providers to identify and repair duct leakage. Blower door or duct blaster equipment will be used as a diagnostic tool to locate duct leakage and provide quality control. This LIWAP component is available to all residential customers having a centrally ducted system with electric heating and cooling, provided the duct system is easily accessible.

#### **5.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.

2. Repair recommendations must have been the result of a DEF-approved duct test, or follow the Agency approved protocol.
3. The customer's duct system and HVAC systems must be in adequate condition to accommodate the duct test, and not have been previously tested for the present occupant within a 5-year period.
4. The duct must be accessible for repair.
5. Homes must have centrally-ducted electric cooling and electric heat. If non-space heating combustion appliances exist (i.e., water heater, stove, etc.) then the house must pass a safety test prior to any duct sealing.

## **5.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Only mastic and fiber cloth or mastic with imbed fiber (mixed) may be used to seal the duct system. Duct tape may be used to hold the duct in place while the mastic is drying. If duct tape is used the mastic must cover the duct tape completely and extend a minimum of 2" past the width of the duct tape. Mastic must meet UL181 specifications for the material that the mastic is being applied to.
3. Blower door or duct blaster procedures must be followed as specified in training or manufacturer's instructions, unless otherwise directed by DEF when performing the duct test.

## **5.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor.
3. All participating contractors must have attended and successfully completed a DEF-approved duct repair course. At a minimum, the training will consist of:
  - Training session on Building Science
  - Duct test applications (classroom and laboratory)
  - Duct test field applications
  - Codes and standards as they relate to duct sealing

4. Before any duct repairs can be made on homes with non-space heating combustion appliances the contractor shall follow the procedures as written in Chapter 4 of the “Duct Doctoring” instruction manual provided by the Florida Solar Energy Center Duct Diagnostics Training Course. The only exception is line 36, which deals with drilling a hole in the customer’s vent pipe. This is not required. Instead of this procedure, DEF has adopted the National Fuel Gas Code’s “Appendix H: Recommended Procedure for Safety Inspection of an Existing Appliance Installation.”
5. A list of DEF contractors will be furnished to local weatherization providers for duct testing and repair. Providers will contract directly with DEF duct repair contractors for repair work.

#### **5.4. INSPECTION REQUIREMENTS**

All inspectors must be trained in the area for which they are inspecting. If inspecting for the Duct Test and Leakage portion of this program, all inspectors must have attended and successfully completed the training offered by the Florida Solar Energy Center or similar course. At a minimum, the training will consist of:

- Training session on Building Science
- Duct test applications (classroom and laboratory)
- Duct test field applications
- Codes and standards as they relate to duct sealing

#### **6. HIGH EFFICIENCY ELECTRIC HEAT PUMPS**

Promote the proper sizing and installation of high efficiency Heat Pump systems.

##### **6.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol.

##### **6.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers’ instructions and specifications.

2. Installed equipment must be complete systems and shall be listed by Underwriters Laboratories or other nationally recognized testing laboratories in accordance with UL standards, as appropriate.
3. Both air handler and condensing units must be replaced.
4. The installed air handler/outdoor condensing unit combination must satisfy both the cooling and heating minimum efficiency requirements.
5. All equipment shall be new and not refurbished or have been previously installed or used.
6. Equipment efficiency ratings shall be obtained from a nationally recognized certification program directory or a manufacturer's rating certified to be in compliance with an approved Department of Energy (DOE) or Air Conditioning and Refrigeration Institute (ARI) rating procedure (standard 210/240-94). All cooling-mode efficiency ratings eligibility will be based on EER if available. (Note: If EER ratings are not available then SEER will be used to determine cooling-mode eligibility. All heating-mode efficiency ratings eligibility will be based on HSPF, except for water source units.)
7. If the unit is sized larger than one ton (12,000 BTU) per 500 square feet of conditioned space, a manual J or ASHRAE approved sizing calculation must be submitted. The contractor must certify that the unit was sized according to manufacturer specifications. Exception: Manufactured homes are exempted from this requirement.
8. The contractor will certify that the unit was sized according to manufacturer specifications.
9. Refrigerant charge and type shall be according to manufacturer's specifications and recommendations for the unit installed. The contractor will certify that the proper charge is installed, that the unit is tested and is leak free.
10. Contractors shall certify that the airflow meets the manufacturer's recommendations and specifications for the system installed.
11. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 Btu or larger), that a hard start kit was installed either by the contractor or at the factory.
12. Return air filters shall be installed to meet manufacturer's specifications with no obstructions. Filters must be easily accessible and the location shown to the customer.

13. The contractor shall check that the controlling thermostat is properly leveled, that the anticipator is properly set, and the thermometer is correct to within two degrees Fahrenheit.
14. The contractor will be encouraged to use mastic on all new connections.
15. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
16. Heat pump must be all electric.

### **6.3 CONTRACTOR REQUIREMENTS**

1. Must meet Contractor Requirements in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor in the jurisdiction having authority.
3. Contractors must demonstrate their capability to properly calculate heating and cooling loads by the Manual J method and to properly size and specify HVAC equipment.
4. The contractor must notify DEF within thirty (30) days if there was an emergency replacement due to equipment failure.
5. The Agency shall have six (6) months from date of installation to submit all “High Efficiency Equipment Forms” after which they will become ineligible for incentive.

## **7. HEATING AND AIR CONDITIONING MAINTENANCE (HVAC)**

Heating and air conditioning maintenance is designed to increase energy efficiency through proper operation of mechanical equipment. Agencies are encouraged to identify HVAC systems that could benefit from service maintenance to avoid future breakdowns.

### **7.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must have centrally ducted electric heating and cooling.

## 7.2 EQUIPMENT/SERVICE AND INSTALLATION SPECIFICATIONS

The following represents the minimum requirement that must be performed by an approved contractor:

### **Filter:**

- Inspect and clean filters
- Replace up to one inch throw-away filter
- Replace specialty filters if provided by customer

### **System Controls and Operation:**

- Check thermostatic operation
- Cycle all controls
- Inspect for dirt and loose connections; clean and tighten as necessary
- Visually check all connections for refrigerant leaks
- Check refrigerant pressure and add as needed
- Check and record supply and return temperature

### **Evaporator:**

- Inspect coil assembly and drip pan
- Clean coil and pan and flush as necessary
- Check drain line and blow out if necessary
- Apply algae treatment as required

### **Blower and Blower Drive:**

- Oil blower motor if applicable
- Check motor bearings
- Check belt condition and tension; replace if necessary
- Check blower cleanliness; clean if necessary
- Check and record amp draw
- Check drive and pulley alignment
- Check for vibrations

### **Condenser:**

- Lubricate condenser fan motor, if applicable
- Check motor bearings



- Check coil condition for dirt build-up and clean as necessary
- Clean condenser as needed

**Compressor:**

- Check electrical wire connections; clean and tighten where possible
- Check operation and condition
- Check and record operating amperage

**Heating System:**

- Check electric heat strips

**7.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Sections 2.1 and 6.3.

**8.0 WATER HEATER**

It is the intent of this portion of the program to save energy through adding additional insulation to older water heaters, set back temperatures, insulate pipes and replace older less efficient water heaters, and help defray the cost of a new high efficient water heater.

**8.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF approved audit, or Agency assessment protocol.
3. Must have an electric water heater.

**8.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. Sides must be wrapped with a minimum Insulation level equal to R-6 or greater.
2. Top must be insulated to an R-8 or greater.

3. Pipes shall be insulated up to 3-foot minimum.

### **8.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Section 2.1.

### **9.0 AIR INFILTRATION REDUCTION**

It is the intent of this portion of the program to save energy through reduction of unintended air infiltration into conditioned spaces of older homes.

### **9.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.
3. Must be able to achieve an infiltration reduction of at least 1,500 cfm at 50 pascals.
4. Home must meet ASHRA Standard 90.2 as a minimum air infiltration level once infiltration sealing is completed.

### **9.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

Contractor must use a blower door and a manometer for precise pressure measurements.

### **9.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Section 2.1 and 6.3.

### **10.0 COMPACT FLUORESCENT BULBS/LED BULBS, WATER SAVING SHOWERHEADS AND FAUCET AERATORS**

### **10.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.

2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.

<b>Measure</b>	<b>Participation Requirements</b>	<b>Equipment and Installation Specifications</b>
Water Saving Showerhead	<ul style="list-style-type: none"> <li>• Electric Water Heater</li> <li>• Current showerhead flow of 3.5 gallon per minute or greater</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> </ul>
Compact Fluorescent Light Bulb  LED Light Bulb	<ul style="list-style-type: none"> <li>• 15 or 18 watt compact fluorescent replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> <li>• 9 watt LED replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Must not be installed on a dimming circuit</li> <li>• Must not be installed in an enclosed fixture</li> <li>• Must be interior use only</li> </ul>
Faucet aerators	<ul style="list-style-type: none"> <li>• No aerators currently installed</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Threads must be compatible with existing faucet threads</li> </ul>

## 10.2 CONTRACTOR REQUIREMENTS

Must meet the Contractor Requirements outlined in Section 2.1.

## 11.0 REFRIGERATOR REPLACEMENTS

### 11.1 PARTICIPATION REQUIREMENTS

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.

## **11.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. New refrigerator must be Energy Star rated.
2. Old refrigerator must be decommissioned and recycled appropriately.
3. Old refrigerator must be metered for 2 hours w/o defrost cycle, or metered for 24 hours to make sure that usage is over 900 kWh per year.
4. Replacement refrigerator must be top freezer, no through the door ice maker, no water dispenser, white or black, 18 to 21 cubic feet.

## **11.3 CONTRACTOR REQUIREMENTS**

1. Must meet the contractor requirements outlined in section 2.1.
2. Contractor is responsible for removing old refrigerator from home and will put a hole through old unit and/or cut the cord so it cannot be reused.

## **12.0 INCENTIVE PROCESSING**

Incentives will be paid directly to the Agencies. Agencies are required to submit the following information along with all invoices by the tenth workday of each month (not to exceed forty-five (45) days from the date of installation):

- Customer information - including name, address, and DEF account number.
- A list of installed measures and, where appropriate, pre-existing conditions
- Pre and post CFM 50 readings
- Itemized invoice with a brief description of installed measures (incentive measures only) and program incentive for each weatherized home, or the DEF/LIWAP data information form.

If the home is not selected for inspection, or after it has passed inspection, invoices will be processed for payment. DEF will input installed measures and paid incentives to a data base system. Submitted reports and invoices will be maintained on file.

### **13.0 REPORTING REQUIREMENTS**

DEF will follow the reporting requirements consistent with Rule 25-17.0021(5), Florida Administrative Code.

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## 1.0 PROGRAM OVERVIEW

Duke Energy Florida, LLC's (DEF) Low-income Weatherization Assistance Program (LIWAP) is a custom energy conservation program. Through its partnerships with local weatherization providers ~~(“Agencies”)~~, DEF provides education about energy saving opportunities and installs energy efficiency measures in homes of qualifying low income customers. The LIWAP seeks to achieve the following goals:

1. Integrate DEF's LIWAP procedures with the Department of Economic Opportunity (DEO) and local weatherization providers (collectively referred to as “Agencies”) to deliver energy efficiency measures to low-income families.
- ~~2.~~ Identify and educate ~~a~~ Agencies and low income customers about energy saving opportunities to upgrade their home's energy efficiency.
- ~~2.~~ Increase low-income families' participation in DEF's DSM programs.
- ~~3.~~ Minimize “lost opportunities” in the existing marketplace.

## 2.0 ELIGIBILITY REQUIREMENTS

The eligibility requirements for LIWAP will align with the participating Agency's criteria or requirements ~~DEO's requirements~~ for participation in their low income services. ~~Weatherization Assistance Program for Low Income. The DEO is responsible for providing annual updates to participating providers.~~ Additional requirements are as follows:

- The residence must be in DEF's service area and be a residentially metered customer with an active account.
- ~~• Must meet Florida's weatherization low income criteria in addition to income requirements stated above.~~
- All installations must be accessible for verification by a DEF representative.

- Homes must be greater than two years old.
- Homes having previously received DEF incentives for listed measures are not eligible for the same measure.

## 2.1 CONTRACTOR REQUIREMENTS

The ~~Department of Economic Opportunity and local weatherization providers~~ Agencies are responsible for all work performed. ~~Local providers~~ Agencies may also use DEF participating contractors for attic insulation and duct testing/repair.

1. ~~Local providers~~ Agencies and their agents must have appropriate license(s) and comply with all appropriate federal, state, and local building and safety codes for all work performed.
2. All work performed must follow manufacturers' and DEF's specifications where applicable.
3. ~~Local providers~~ Agencies and their agents must correct any deficiencies found in the installation or materials identified by DEF.
4. ~~DEO/Providers~~ Agencies shall indemnify and hold DEF harmless from any and all losses, liabilities, injuries, damages claims or costs whatsoever caused by items furnished or services rendered.
5. All DEF contractors shall indemnify and hold harmless DEF from any and all losses, liabilities, injuries, damages, claims or costs whatsoever caused by items furnished or services rendered.
6. DEF requires a minimum of the following insurance policies be in force by all participating contractors:
  - Workman's Compensation as required by law.
  - General Contractual and Automobile Bodily Injury Liability: \$100,000 per person and \$300,000 per occurrence.
  - General and Automobile Property Damage Liability: \$100,000 per occurrence.
  - General and Vehicle Liability policies endorsed: \$100,000 per occurrence to provide blanket coverage.



## 2.2 EQUIPMENT/MATERIALS AND INSTALLATION SPECIFICATIONS

All materials and installation specifications shall meet or exceed the following guidelines:

- ~~• Weatherization Installation Standards of the U.S. Department of Energy.~~
- Equipment must meet manufacturers' specification and installation procedures.
- All work shall be performed to constitute a finished product.
- Materials shall be free of defects and covered under warranty for at least one year.
- Installation procedures must comply with all federal, state and local codes.
- All equipment installations must meet manufacturer's instructions and specifications. Any contractor failing to meet manufacturer's specifications and DEF procedures may result in termination of participation in any or all DEF programs.

## 2.3 ~~LOCAL PROVIDERS~~ AGENCY RESPONSIBILITY

~~The Department of Economic Opportunity, through their local weatherization providers,~~ Agencies will be responsible for the following:

1. Qualify all participants using federal and state guidelines outlined in Section 2.
- ~~2. Perform an audit using the National Energy Audit Tool (NEAT) or any DEF approved energy audit on all eligible low income weatherization installations. Follow the recommendations of the National Energy Audit Tool (NEAT), Agency assessment protocol or any DEF approved energy audit to determine eligible measures to be installed.~~
- ~~3-2.~~ Qualify and install measures by DEF's standards and procedures. All installations shall comply with DEF specifications (see Sections 4.2 through 10.2).
- ~~4-3.~~ Provide DEF random access to the weatherized homes for program evaluation and inspection.
- ~~5-4.~~ Deliver energy education to weatherization clients.
- ~~6-5.~~ Invoice DEF for program approved installed measures on a monthly basis.

## 3.0 INCENTIVES AND ELIGIBLE MEASURES

Duke Energy will provide incentives for the following measures with the stipulation that all requirements and minimum levels are achieved where applicable:

<b>Weatherization Measure</b>	<b>Minimum Measure Requirement</b>	<b>Maximum Incentive Amount</b>	<b>Additional Requirements</b>
Attic Insulation	Insulate homes with R5 or less to at least R-19 on residences with whole house electric air conditioning and/or electric heating	\$.50 per square foot up to a maximum of \$300 per home	Must be a recommendation of a NEAT or DEF-approved audit, or <u>Agency assessment protocol</u>
Duct Leakage Test/ Repair	Repair Centrally Ducted Electric Heated and Cooled Systems	\$150	1. LIWAP Inspection 2. Completed Duct Test
Reduce Air Infiltration	Must demonstrate a minimum reduction of 1500 cfm at 50 pascals in electrically heated homes Not to exceed a minimum of 0.35 ACH	\$37.50	Must be a recommendation of a NEAT or DEF-approved audit, or <u>Agency assessment protocol</u>
Electric Hot Water Reduction	Wrap electric water heater, insulate water pipes, lower temperature setting if needed, repair water leaks	\$20	Must be a recommendation of a NEAT or DEF-approved audit, or <u>Agency assessment protocol</u> LIWAP Inspection
HVAC Maintenance	Tune up on Centrally Ducted Electric Heated and Cooled Systems	\$150	Must be a recommendation of a NEAT or DEF-approved audit, or <u>Agency assessment protocol</u> LIWAP Inspection
High Efficiency Heat Pump Replacing a Heat Pump	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,000	Must be a recommendation of a NEAT or DEF-approved

High Efficiency Heat Pump Replacing Electric Resistance Heat	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,500	<u>audit, or Agency assessment protocol.</u> Incentive applicable on each new HP installed
Water Saving Showerheads	Maximum of 2.5 gallon per minute flow on homes with Electric Water Heaters	\$10 per showerhead	Maximum of 2 per home
Energy-efficient Light Bulbs	15 or 18 watt Compact Fluorescent replacing incandescent lamp greater than or equal to 60 watts 9 watt LED replacing incandescent lamp greater than or equal to 60 watts	\$3.00 per lamp \$4.50 per lamp	Maximum of 6 light bulbs per household
Faucet Aerators	Water Flow Reduction on homes with Electric Water Heaters	\$5 per Aerator	Maximum of 2 per household
Refrigerator	Must be Energy Star rated	\$400	1 per household

**Notes:**

1. In multi-family structures, DEF reserves the right to request bids from contractors to hold costs to a minimum.
2. Incentive amounts will be reviewed and compared to market prices annually and adjusted accordingly.

**4. CEILING INSULATION****4.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or ~~or~~ DEF-approved audit, or Agency assessment protocol.
3. The home must be at least two years old.
4. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.
5. The weighted average R-value of the existing insulation over the total attic square footage (above conditioned space) must be less than R-11.

6. Any structure that has utilized any of DEF's ceiling insulation programs is not eligible to participate again. However, if the structure, through an act of God, loses the insulation **and** the loss is **not** covered by insurance, the structure is eligible to participate a second time. It is the customer's responsibility to provide DEF with a letter from his/her insurance company stating that the insulation was not covered.
7. The total ceiling area to be insulated must be greater than 100 square feet.
8. Mobile homes built after January 1, 1977 will be assumed to have an insulation value in excess of R-11 and will not be eligible to participate in this part of the LIWAP program unless documentation is provided to DEF stating that the actual existing insulation value is less than R-12.
9. Any home with "Knob and Tube Wiring" that is energized is not eligible. (Refer to: National Electrical Code, Article 324, Section 324-4).

#### **4.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. The insulation must be installed in accordance with the manufacturer's recommendations and specifications.
2. All installations must result in an insulation value equal to or greater than R-19.
3. Flat roofs must have sufficient space to allow a minimum of 3 inches of air space above the insulation after insulation has been installed to the recommended R-value.
4. The insulation must be installed in the unconditioned space as a direct application to the attic area over the conditioned space.
5. The insulation must have a minimum clearance around all recessed lighting and gas-fired appliances as required by State, County and local codes.
6. The insulation must be installed uniformly, resulting in a minimum R-19 value throughout the entire area including knee walls. (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1.A.1 Walls Considered Ceiling Area).
7. All attic access panels that are located in conditioned space must be insulated with a minimum R-19 batt permanently attached.
8. Radiant barriers will not be allowed as a substitute in the LIWAP.
9. Ceilings with a rise greater than 5 and a run of 12 (5 over 12 pitch) shall not be insulated with blown-in (loose fill) insulation. Blown-in insulation shall not be used in attics where the distance from the top of the bottom chord of the truss or ceiling joist to the underside of the top chord of the trusses at the ridge is less than 30 inches and where obstructions to blown insulation exist (such as air conditioning ducts).

(Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1ABC.1.1 Ceilings With Blown-In Insulation).

### **4.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. The contractor will supply to the customer, in writing the number of bags installed, and leave with the customer an empty bag or manufacturer's literature in order to determine the required density of the insulation.
3. The contractor will attach an R-value Certification Card signed by the insulation contractor or his representative to the attic joist visible from the attic access. The card shall contain, at a minimum, the following information:
  - Manufacturer's name
  - Insulation type
  - R-Value of insulation installed
  - Thickness of insulation installed
  - Location of insulation installed
  - Name and address of the contractor installing the insulation
  - Date of installation

### **5. DUCT LEAKAGE REPAIR**

LIWAP duct repair is designed encourage weatherization providers to identify and repair duct leakage. Blower door or duct blaster equipment will be used as a diagnostic tool to locate duct leakage and provide quality control. This LIWAP component is available to all residential customers having a centrally ducted system with electric heating and cooling, provided the duct system is easily accessible.

#### **5.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Repair recommendations must have been the result of a DEF-approved duct test, or follow the Agency approved protocol.
3. The customer's duct system and HVAC systems must be in adequate condition to accommodate the duct test, and not have been previously tested for the present occupant within a 5-year period.

4. The duct must be accessible for repair.
5. Homes must have centrally-ducted electric cooling and electric heat. If non-space heating combustion appliances exist (i.e., water heater, stove, etc.) then the house must pass a safety test prior to any duct sealing.

## **5.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Only mastic and fiber cloth or mastic with imbed fiber (mixed) may be used to seal the duct system. Duct tape may be used to hold the duct in place while the mastic is drying. If duct tape is used the mastic must cover the duct tape completely and extend a minimum of 2" past the width of the duct tape. Mastic must meet UL181 specifications for the material that the mastic is being applied to.
3. Blower door or duct blaster procedures must be followed as specified in training or manufacturer's instructions, unless otherwise directed by DEF when performing the duct test.

## **5.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor.
3. All participating contractors must have attended and successfully completed a DEF-approved duct repair course. At a minimum, the training will consist of:
  - Training session on Building Science
  - Duct test applications (classroom and laboratory)
  - Duct test field applications
  - Codes and standards as they relate to duct sealing
4. Before any duct repairs can be made on homes with non-space heating combustion appliances the contractor shall follow the procedures as written in Chapter 4 of the "Duct Doctoring" instruction manual provided by the Florida Solar Energy Center Duct Diagnostics Training Course. The only exception is line 36, which deals with drilling a hole in the customer's vent pipe. This is not required. Instead of this procedure, DEF has adopted the National Fuel Gas Code's "Appendix H: Recommended Procedure for Safety Inspection of an Existing Appliance Installation."

5. A list of DEF contractors will be furnished to local weatherization providers for duct testing and repair. Providers will contract directly with DEF duct repair contractors for repair work.

#### **5.4. INSPECTION REQUIREMENTS**

All inspectors must be trained in the area for which they are inspecting. If inspecting for the Duct Test and Leakage portion of this program, all inspectors must have attended and successfully completed the training offered by the Florida Solar Energy Center or similar course. At a minimum, the training will consist of:

- Training session on Building Science
- Duct test applications (classroom and laboratory)
- Duct test field applications
- Codes and standards as they relate to duct sealing

#### **6. HIGH EFFICIENCY ELECTRIC HEAT PUMPS**

Promote the proper sizing and installation of high efficiency Heat Pump systems.

##### **6.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or ~~or~~ DEF-approved audit, or Agency assessment protocol.

##### **6.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Installed equipment must be complete systems and shall be listed by Underwriters Laboratories or other nationally recognized testing laboratories in accordance with UL standards, as appropriate.
3. Both air handler and condensing units must be replaced.

4. The installed air handler/outdoor condensing unit combination must satisfy both the cooling and heating minimum efficiency requirements.
5. All equipment shall be new and not refurbished or have been previously installed or used.
6. Equipment efficiency ratings shall be obtained from a nationally recognized certification program directory or a manufacturer's rating certified to be in compliance with an approved Department of Energy (DOE) or Air Conditioning and Refrigeration Institute (ARI) rating procedure (standard 210/240-94). All cooling-mode efficiency ratings eligibility will be based on EER if available. (Note: If EER ratings are not available then SEER will be used to determine cooling-mode eligibility. All heating-mode efficiency ratings eligibility will be based on HSPF, except for water source units.)
7. If the unit is sized larger than one ton (12,000 BTU) per 500 square feet of conditioned space, a manual J or ASHRAE approved sizing calculation must be submitted. The contractor must certify that the unit was sized according to manufacturer specifications. Exception: Manufactured homes are exempted from this requirement.
8. The contractor will certify that the unit was sized according to manufacturer specifications.
9. Refrigerant charge and type shall be according to manufacturer's specifications and recommendations for the unit installed. The contractor will certify that the proper charge is installed, that the unit is tested and is leak free.
10. Contractors shall certify that the airflow meets the manufacturer's recommendations and specifications for the system installed.
11. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 Btu or larger), that a hard start kit was installed either by the contractor or at the factory.
12. Return air filters shall be installed to meet manufacturer's specifications with no obstructions. Filters must be easily accessible and the location shown to the customer.
13. The contractor shall check that the controlling thermostat is properly leveled, that the anticipator is properly set, and the thermometer is correct to within two degrees Fahrenheit.
14. The contractor will be encouraged to use mastic on all new connections.
15. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.



16. Heat pump must be all electric.

### 6.3 CONTRACTOR REQUIREMENTS

1. Must meet Contractor Requirements in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor in the jurisdiction having authority.
3. Contractors must demonstrate their capability to properly calculate heating and cooling loads by the Manual J method and to properly size and specify HVAC equipment.
4. The contractor must notify DEF within thirty (30) days if there was an emergency replacement due to equipment failure.
5. The ~~a~~Agency shall have six (6) months from date of installation to submit all "High Efficiency Equipment Forms" after which they will become ineligible for incentive.

## 7. HEATING AND AIR CONDITIONING MAINTENANCE (HVAC)

Heating and air conditioning maintenance is designed to increase energy efficiency through proper operation of mechanical equipment. ~~Local providers~~Agencies are encouraged to identify HVAC systems that could benefit from service maintenance to avoid future breakdowns.

### 7.1 PARTICIPATION REQUIREMENTS

1. Must meet Eligibility Requirements outlined in Section 2.0. ~~Must be a recommendation from a LIWAP inspection.~~
2. Must have centrally ducted electric heating and cooling.

### 7.2 EQUIPMENT/SERVICE AND INSTALLATION SPECIFICATIONS

The following represents the minimum requirement that must be performed by an approved contractor:

**Filter:**

- Inspect and clean filters
- Replace up to one inch throw-away filter

- Replace specialty filters if provided by customer

**System Controls and Operation:**

- Check thermostatic operation
- Cycle all controls
- Inspect for dirt and loose connections; clean and tighten as necessary
- Visually check all connections for refrigerant leaks
- Check refrigerant pressure and add as needed
- Check and record supply and return temperature

**Evaporator:**

- Inspect coil assembly and drip pan
- Clean coil and pan and flush as necessary
- Check drain line and blow out if necessary
- Apply algae treatment as required

**Blower and Blower Drive:**

- Oil blower motor if applicable
- Check motor bearings
- Check belt condition and tension; replace if necessary
- Check blower cleanliness; clean if necessary
- Check and record amp draw
- Check drive and pulley alignment
- Check for vibrations

**Condenser:**

- Lubricate condenser fan motor, if applicable
- Check motor bearings
- Check coil condition for dirt build-up and clean as necessary
- Clean condenser as needed

**Compressor:**

- Check electrical wire connections; clean and tighten where possible
- Check operation and condition
- Check and record operating amperage

**Heating System:**

- Check electric heat strips

**7.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Sections 2.1 and 6.3.

**8.0 WATER HEATER**

It is the intent of this portion of the program to save energy through adding additional insulation to older water heaters, set back temperatures, insulate pipes and replace older less efficient water heaters, and help defray the cost of a new high efficient water heater.

**8.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or ~~or~~ DEF approved audit, or Agency assessment protocol.

~~1.~~

~~2. Must be a recommendation from a LIWAP inspection.~~

~~1-3.~~ Must have an electric water heater.

**8.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. Sides must be wrapped with a minimum Insulation level equal to R-6 or greater.
2. Top must be insulated to an R-8 or greater.
3. Pipes shall be insulated up to 3-foot minimum.

**8.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Section 2.1.

## 9.0 AIR INFILTRATION REDUCTION

It is the intent of this portion of the program to save energy through reduction of unintended air infiltration into conditioned spaces of older homes.

### 9.1 PARTICIPATION REQUIREMENTS

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or ~~or~~ DEF-approved audit, or Agency assessment protocol.
3. Must be able to achieve an infiltration reduction of at least 1,500 cfm at 50 pascals.
4. Home must meet ASHRA Standard 90.2 as a minimum air infiltration level once infiltration sealing is completed.

### 9.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS

Contractor must use a blower door and a manometer for precise pressure measurements.

### 9.3 CONTRACTOR REQUIREMENTS

Must meet Contractor Requirements in Section 2.1 and 6.3.

## 10.0 COMPACT FLUORESCENT BULBS/LED BULBS, WATER SAVING SHOWERHEADS AND FAUCET AERATORS

### 10.1 PARTICIPATION REQUIREMENTS

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or ~~or~~ DEF-approved audit, or Agency assessment protocol.

Measure	Participation Requirements	Equipment and Installation Specifications
Water Saving Showerhead	<ul style="list-style-type: none"> <li>• Electric Water Heater</li> <li>• Current showerhead flow of 3.5 gallon per minute or greater</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> </ul>

<p>Compact Fluorescent Light Bulb</p> <p>LED Light Bulb</p>	<ul style="list-style-type: none"> <li>• 15 or 18 watt compact fluorescent replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> <li>• 9 watt LED replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Must not be installed on a dimming circuit</li> <li>• Must not be installed in an enclosed fixture</li> <li>• Must be interior use only</li> </ul>
<p>Faucet aerators</p>	<ul style="list-style-type: none"> <li>• No aerators currently installed</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Threads must be compatible with existing faucet threads</li> </ul>

## 10.2 CONTRACTOR REQUIREMENTS

Must meet the Contractor Requirements outlined in Section 2.1.

## 11.0 REFRIGERATOR REPLACEMENTS

### 11.1 PARTICIPATION REQUIREMENTS

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. -Must be a recommendation from a NEAT or ~~or~~ DEF-approved audit, or Agency assessment protocol.

### 11.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS

1. New refrigerator must be Energy Star rated.
2. Old refrigerator must be decommissioned and recycled appropriately.
3. Old refrigerator must be metered for 2 hours w/o defrost cycle, or metered for 24 hours to make sure that usage is over 900 kWh per year.
4. Replacement refrigerator must be top freezer, no through the door ice maker, no water dispenser, white or black, 18 to 21 cubic feet.

### 11.3 CONTRACTOR REQUIREMENTS

1. Must meet the contractor requirements outlined in section 2.1.
2. Contractor is responsible for removing old refrigerator from home and will put a hole through old unit and/or cut the cord so it cannot be reused.

### 12.0 INCENTIVE PROCESSING

Incentives will be paid directly to ~~the Agencies weatherization providers~~. ~~Weatherization providers~~ Agencies are required to submit the following information along with all invoices by the tenth workday of each month (not to exceed forty-five (45) days from the date of installation):

- Customer information - including name, address, and DEF account number.
- A list of installed measures and, where appropriate, pre-existing conditions
- Pre and post CFM 50 readings
- Itemized invoice with a brief description of installed measures (incentive measures only) and program incentive for each weatherized home, or the DEF/LIWAP data information form.

If the home is not selected for inspection, or after it has passed inspection, invoices will be processed for payment. DEF will input installed measures and paid incentives to a data base system. Submitted reports and invoices will be maintained on file.

### 13.0 REPORTING REQUIREMENTS

DEF will follow the reporting requirements consistent with Rule 25-17.0021(5), Florida Administrative Code.

**DEF's Response to Staff's Fourth Data Request**

1. Please refer to Section 1.0 of the Program Standards. Please explain why it is necessary to redefine weatherization providers as Agencies.

**Response:**

To simplify the language in the document, the Department of Economic Opportunity (DEO) and local weatherization providers have collectively been defined as "Agencies" in Section 1.0 and throughout the remainder of the document the term "Agencies" is intended to reference both the DEO and other local weatherization providers.

- a. Please refer to goal 1 of this section. Here, the Department of Economic Opportunity (DEO) and local Agencies are referred to separately, whereas in section 2.0, it states "The eligibility requirements for LIWAP will align with the participating Agency's criteria or requirements ." Is DEO included in the term "Agency"? If so, would it be best to refer to DEO and local weatherization providers as "Agencies"?

**Response:**

Yes, the DEO is included in the term "Agency". We have revised the document as suggested by Staff. Please see Attachments B and C that are meant to replace the previously provided attachments.

2. Please refer to Section 2.1 of the Program Standards. Here it states, that Agencies may use DEF participating contractors. Can DEO use DEF's participating contractors?

**Response:**

Yes, DEO can use DEF's participating contractors.

- a. Please refer to number 1 of this section. Please explain why Agencies need licenses.

**Response:**

Any party, including an Agency, that installs weatherization measures needs to have the appropriate licenses. To clarify we have modified the language to state "Agencies and their agents". Please see Attachment C.

3. Please refer to Section 2.2 of the Program Standards. Please explain why "Weatherization Installation Standards of the U.S. Department of Energy" was removed from the list of guidelines to be met.

**Response:**

"Weatherization Standards of the U.S. Department of Energy" was removed from the program guidelines because those standards are only applicable to weatherization agencies that receive funding from the Department of Energy (DOE). In the past, all of the weatherization agencies that DEF partnered with through the LIWAP program received funding from the DOE and therefore the work they performed needed to meet DOE's Weatherization Standards. However, the proposed changes to the LIWAP program will allow DEF to partner with agencies who do not receive DOE funding and therefore the DOE standards are not applicable to those agencies.

4. Please refer to Section 5.1 of the Program Standards. Please explain why National Energy Audit-Tool (NEAT) is not included as a part of the Participation Requirements.

**Response:**

The National Energy Audit Tool (NEAT) is not included as a Participation Requirement in Section 5.1 because the Tool cannot detect duct leakage. For homes with a central HVAC system, a duct blaster test is performed to determine duct leakage.

5. Please refer to Section 7.1 of the Program Standards. Please explain why there is not an audit requirement as a part of the Participation Requirements.

**Response:**

Please refer to the Heating and Cooling measures in Table 3.0. The audit requirement is included in the table in the column labeled "Additional Requirements".



**DUKE ENERGY FLORIDA, LLC**

**PROGRAM PARTICIPATION STANDARDS**

**LOW-INCOME WEATHERIZATION ASSISTANCE PROGRAM**

**DUKE ENERGY FLORIDA, LLC**  
**PROGRAM PARTICIPATION STANDARDS**  
**LOW-INCOME WEATHERIZATION ASSISTANCE PROGRAM**

**1.0 PROGRAM OVERVIEW**

Duke Energy Florida, LLC's (DEF) Low-income Weatherization Assistance Program (LIWAP) is a custom energy conservation program. Through its partnerships with local weatherization providers, DEF provides education about energy saving opportunities and installs energy efficiency measures in homes of qualifying low income customers. The LIWAP seeks to achieve the following goals:

1. Integrate DEF's LIWAP procedures with the Department of Economic Opportunity (DEO) and local weatherization providers (collectively referred to as "Agencies") to deliver energy efficiency measures to low-income families.
2. Identify and educate Agencies and low income customers about energy saving opportunities to upgrade their home's energy efficiency.
3. Increase low-income families' participation in DEF's DSM programs.
4. Minimize "lost opportunities" in the existing marketplace.

**2.0 ELIGIBILITY REQUIREMENTS**

The eligibility requirements for LIWAP will align with the participating Agency's criteria or requirements for participation in their low income services. Additional requirements are as follows:

- The residence must be in DEF's service area and be a residentially metered customer with an active account.
- All installations must be accessible for verification by a DEF representative.
- Homes must be greater than two years old.
- Homes having previously received DEF incentives for listed measures are not eligible for the same measure.

**2.1 CONTRACTOR REQUIREMENTS**

The Agencies are responsible for all work performed. Agencies may also use DEF participating contractors for attic insulation and duct testing/repair.

1. Agencies and their agents must have appropriate license(s) and comply with all appropriate federal, state, and local building and safety codes for all work performed.
2. All work performed must follow manufacturers' and DEF's specifications where applicable.
3. Agencies and their agents must correct any deficiencies found in the installation or materials identified by DEF.
4. Agencies shall indemnify and hold DEF harmless from any and all losses, liabilities, injuries, damages claims or costs whatsoever caused by items furnished or services rendered.
5. All DEF contractors shall indemnify and hold harmless DEF from any and all losses, liabilities, injuries, damages, claims or costs whatsoever caused by items furnished or services rendered.
6. DEF requires a minimum of the following insurance policies be in force by all participating contractors:
  - Workman's Compensation as required by law.
  - General Contractual and Automobile Bodily Injury Liability: \$100,000 per person and \$300,000 per occurrence.
  - General and Automobile Property Damage Liability: \$100,000 per occurrence.
  - General and Vehicle Liability policies endorsed: \$100,000 per occurrence to provide blanket coverage.

**2.2 EQUIPMENT/MATERIALS AND INSTALLATION SPECIFICATIONS**

All materials and installation specifications shall meet or exceed the following guidelines:

- Equipment must meet manufacturers’ specification and installation procedures.
- All work shall be performed to constitute a finished product.
- Materials shall be free of defects and covered under warranty for at least one year.
- Installation procedures must comply with all federal, state and local codes.
- All equipment installations must meet manufacturer’s instructions and specifications. Any contractor failing to meet manufacturer’s specifications and DEF procedures may result in termination of participation in any or all DEF programs.

**2.3 AGENCY RESPONSIBILITY**

Agencies will be responsible for the following:

1. Qualify all participants using federal and state guidelines outlined in Section 2.
2. Follow the recommendations of the National Energy Audit Tool (NEAT), Agency assessment protocol or any DEF approved energy audit to determine eligible measures to be installed. Qualify and install measures by DEF’s standards and procedures. All installations shall comply with DEF specifications (see Sections 4.2 through 10.2).
3. Provide DEF random access to the weatherized homes for program evaluation and inspection.
4. Deliver energy education to weatherization clients.
5. Invoice DEF for program approved installed measures on a monthly basis.

**3.0 INCENTIVES AND ELIGIBLE MEASURES**

Duke Energy will provide incentives for the following measures with the stipulation that all requirements and minimum levels are achieved where applicable:

Weatherization Measure	Minimum Measure Requirement	Maximum Incentive Amount	Additional Requirements
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Attic Insulation	Insulate homes with R5 or less to at least R-19 on residences with whole house electric air conditioning and/or electric heating	\$.50 per square foot up to a maximum of \$300 per home	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
Duct Leakage Test/ Repair	Repair Centrally Ducted Electric Heated and Cooled Systems	\$150	Completed Duct Test
Reduce Air Infiltration	Must demonstrate a minimum reduction of 1500 cfm at 50 pascals in electrically heated homes Not to exceed a minimum of 0.35 ACH	\$37.50	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
Electric Hot Water Reduction	Wrap electric water heater, insulate water pipes, lower temperature setting if needed, repair water leaks	\$20	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
HVAC Maintenance	Tune up on Centrally Ducted Electric Heated and Cooled Systems	\$150	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
High Efficiency Heat Pump Replacing a Heat Pump	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,000	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol. Incentive applicable on each new HP installed
High Efficiency Heat Pump Replacing Electric Resistance Heat	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,500	

Water Saving Showerheads	Maximum of 2.5 gallon per minute flow on homes with Electric Water Heaters	\$10 per showerhead	Maximum of 2 per home
Energy-efficient Light Bulbs	15 or 18 watt Compact Fluorescent replacing incandescent lamp greater than or equal to 60 watts	\$3.00 per lamp	Maximum of 6 light bulbs per household
	9 watt LED replacing incandescent lamp greater than or equal to 60 watts	\$4.50 per lamp	
Faucet Aerators	Water Flow Reduction on homes with Electric Water Heaters	\$5 per Aerator	Maximum of 2 per household
Refrigerator	Must be Energy Star rated	\$400	1 per household

**Notes:**

1. *In multi-family structures, DEF reserves the right to request bids from contractors to hold costs to a minimum.*
2. *Incentive amounts will be reviewed and compared to market prices annually and adjusted accordingly.*

**4. CEILING INSULATION****4.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol.
3. The home must be at least two years old.
4. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.
5. The weighted average R-value of the existing insulation over the total attic square footage (above conditioned space) must be less than R-11.
6. Any structure that has utilized any of DEF's ceiling insulation programs is not eligible to participate again. However, if the structure, through an act of God, loses the insulation **and** the loss is **not** covered by insurance, the structure is eligible to participate a second time. It is the customer's responsibility to provide DEF with a letter from his/her insurance company stating that the insulation was not covered.

7. The total ceiling area to be insulated must be greater than 100 square feet.
8. Mobile homes built after January 1, 1977 will be assumed to have an insulation value in excess of R-11 and will not be eligible to participate in this part of the LIWAP program unless documentation is provided to DEF stating that the actual existing insulation value is less than R-12.
9. Any home with “Knob and Tube Wiring” that is energized is not eligible. (Refer to: National Electrical Code, Article 324, Section 324-4).

#### **4.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. The insulation must be installed in accordance with the manufacturer’s recommendations and specifications.
2. All installations must result in an insulation value equal to or greater than R-19.
3. Flat roofs must have sufficient space to allow a minimum of 3 inches of air space above the insulation after insulation has been installed to the recommended R-value.
4. The insulation must be installed in the unconditioned space as a direct application to the attic area over the conditioned space.
5. The insulation must have a minimum clearance around all recessed lighting and gas-fired appliances as required by State, County and local codes.
6. The insulation must be installed uniformly, resulting in a minimum R-19 value throughout the entire area including knee walls. (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1.A.1 Walls Considered Ceiling Area).
7. All attic access panels that are located in conditioned space must be insulated with a minimum R-19 batt permanently attached.
8. Radiant barriers will not be allowed as a substitute in the LIWAP.
9. Ceilings with a rise greater than 5 and a run of 12 (5 over 12 pitch) shall not be insulated with blown-in (loose fill) insulation. Blown-in insulation shall not be used in attics where the distance from the top of the bottom chord of the truss or ceiling joist to the underside of the top chord of the trusses at the ridge is less than 30 inches and where obstructions to blown insulation exist (such as air conditioning ducts). (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1ABC.1.1 Ceilings With Blown-In Insulation).

#### **4.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. The contractor will supply to the customer, in writing the number of bags installed, and leave with the customer an empty bag or manufacturer's literature in order to determine the required density of the insulation.
3. The contractor will attach an R-value Certification Card signed by the insulation contractor or his representative to the attic joist visible from the attic access. The card shall contain, at a minimum, the following information:
  - Manufacturer's name
  - Insulation type
  - R-Value of insulation installed
  - Thickness of insulation installed
  - Location of insulation installed
  - Name and address of the contractor installing the insulation
  - Date of installation

## **5. DUCT LEAKAGE REPAIR**

LIWAP duct repair is designed encourage weatherization providers to identify and repair duct leakage. Blower door or duct blaster equipment will be used as a diagnostic tool to locate duct leakage and provide quality control. This LIWAP component is available to all residential customers having a centrally ducted system with electric heating and cooling, provided the duct system is easily accessible.

### **5.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Repair recommendations must have been the result of a DEF-approved duct test, or follow the Agency approved protocol.
3. The customer's duct system and HVAC systems must be in adequate condition to accommodate the duct test, and not have been previously tested for the present occupant within a 5-year period.
4. The duct must be accessible for repair.
5. Homes must have centrally-ducted electric cooling and electric heat. If non-space heating combustion appliances exist (i.e., water heater, stove, etc.) then the house must pass a safety test prior to any duct sealing.



## 5.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Only mastic and fiber cloth or mastic with imbed fiber (mixed) may be used to seal the duct system. Duct tape may be used to hold the duct in place while the mastic is drying. If duct tape is used the mastic must cover the duct tape completely and extend a minimum of 2" past the width of the duct tape. Mastic must meet UL181 specifications for the material that the mastic is being applied to.
3. Blower door or duct blaster procedures must be followed as specified in training or manufacturer's instructions, unless otherwise directed by DEF when performing the duct test.

## 5.3 CONTRACTOR REQUIREMENTS

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor.
3. All participating contractors must have attended and successfully completed a DEF-approved duct repair course. At a minimum, the training will consist of:
  - Training session on Building Science
  - Duct test applications (classroom and laboratory)
  - Duct test field applications
  - Codes and standards as they relate to duct sealing
4. Before any duct repairs can be made on homes with non-space heating combustion appliances the contractor shall follow the procedures as written in Chapter 4 of the "Duct Doctoring" instruction manual provided by the Florida Solar Energy Center Duct Diagnostics Training Course. The only exception is line 36, which deals with drilling a hole in the customer's vent pipe. This is not required. Instead of this procedure, DEF has adopted the National Fuel Gas Code's "Appendix H: Recommended Procedure for Safety Inspection of an Existing Appliance Installation."
5. A list of DEF contractors will be furnished to local weatherization providers for duct testing and repair. Providers will contract directly with DEF duct repair contractors for repair work.

## 5.4 INSPECTION REQUIREMENTS

All inspectors must be trained in the area for which they are inspecting. If inspecting for the Duct Test and Leakage portion of this program, all inspectors must have attended and successfully completed the training offered by the Florida Solar Energy Center or similar course. At a minimum, the training will consist of:

- Training session on Building Science
- Duct test applications (classroom and laboratory)
- Duct test field applications
- Codes and standards as they relate to duct sealing

## **6. HIGH EFFICIENCY ELECTRIC HEAT PUMPS**

Promote the proper sizing and installation of high efficiency Heat Pump systems.

### **6.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol.

### **6.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Installed equipment must be complete systems and shall be listed by Underwriters Laboratories or other nationally recognized testing laboratories in accordance with UL standards, as appropriate.
3. Both air handler and condensing units must be replaced.
4. The installed air handler/outdoor condensing unit combination must satisfy both the cooling and heating minimum efficiency requirements.
5. All equipment shall be new and not refurbished or have been previously installed or used.
6. Equipment efficiency ratings shall be obtained from a nationally recognized certification program directory or a manufacturer's rating certified to be in compliance with an approved Department of Energy (DOE) or Air Conditioning and Refrigeration Institute (ARI) rating procedure (standard 210/240-94). All cooling-mode efficiency ratings eligibility will be based on EER if available. (Note: If EER

- ratings are not available then SEER will be used to determine cooling-mode eligibility. All heating-mode efficiency ratings eligibility will be based on HSPF, except for water source units.)
7. If the unit is sized larger than one ton (12,000 BTU) per 500 square feet of conditioned space, a manual J or ASHRAE approved sizing calculation must be submitted. The contractor must certify that the unit was sized according to manufacturer specifications. Exception: Manufactured homes are exempted from this requirement.
  8. The contractor will certify that the unit was sized according to manufacturer specifications.
  9. Refrigerant charge and type shall be according to manufacturer's specifications and recommendations for the unit installed. The contractor will certify that the proper charge is installed, that the unit is tested and is leak free.
  10. Contractors shall certify that the airflow meets the manufacturer's recommendations and specifications for the system installed.
  11. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 Btu or larger), that a hard start kit was installed either by the contractor or at the factory.
  12. Return air filters shall be installed to meet manufacturer's specifications with no obstructions. Filters must be easily accessible and the location shown to the customer.
  13. The contractor shall check that the controlling thermostat is properly leveled, that the anticipator is properly set, and the thermometer is correct to within two degrees Fahrenheit.
  14. The contractor will be encouraged to use mastic on all new connections.
  15. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
  16. Heat pump must be all electric.

### **6.3 CONTRACTOR REQUIREMENTS**

1. Must meet Contractor Requirements in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor in the jurisdiction having authority.

3. Contractors must demonstrate their capability to properly calculate heating and cooling loads by the Manual J method and to properly size and specify HVAC equipment.
4. The contractor must notify DEF within thirty (30) days if there was an emergency replacement due to equipment failure.
5. The Agency shall have six (6) months from date of installation to submit all “High Efficiency Equipment Forms” after which they will become ineligible for incentive.

**7. HEATING AND AIR CONDITIONING MAINTENANCE (HVAC)**

Heating and air conditioning maintenance is designed to increase energy efficiency through proper operation of mechanical equipment. Agencies are encouraged to identify HVAC systems that could benefit from service maintenance to avoid future breakdowns.

**7.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must have centrally ducted electric heating and cooling.

## 7.2 EQUIPMENT/SERVICE AND INSTALLATION SPECIFICATIONS

The following represents the minimum requirement that must be performed by an approved contractor:

### **Filter:**

- Inspect and clean filters
- Replace up to one inch throw-away filter
- Replace specialty filters if provided by customer

### **System Controls and Operation:**

- Check thermostatic operation
- Cycle all controls
- Inspect for dirt and loose connections; clean and tighten as necessary
- Visually check all connections for refrigerant leaks
- Check refrigerant pressure and add as needed
- Check and record supply and return temperature

### **Evaporator:**

- Inspect coil assembly and drip pan
- Clean coil and pan and flush as necessary
- Check drain line and blow out if necessary
- Apply algae treatment as required

### **Blower and Blower Drive:**

- Oil blower motor if applicable
- Check motor bearings
- Check belt condition and tension; replace if necessary
- Check blower cleanliness; clean if necessary
- Check and record amp draw
- Check drive and pulley alignment
- Check for vibrations

### **Condenser:**

- Lubricate condenser fan motor, if applicable
- Check motor bearings
- Check coil condition for dirt build-up and clean as necessary
- Clean condenser as needed

**Compressor:**

- Check electrical wire connections; clean and tighten where possible
- Check operation and condition
- Check and record operating amperage

**Heating System:**

- Check electric heat strips

**7.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Sections 2.1 and 6.3.

**8.0 WATER HEATER**

It is the intent of this portion of the program to save energy through adding additional insulation to older water heaters, set back temperatures, insulate pipes and replace older less efficient water heaters, and help defray the cost of a new high efficient water heater.

**8.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF approved audit, or Agency assessment protocol.
3. Must have an electric water heater.

**8.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. Sides must be wrapped with a minimum Insulation level equal to R-6 or greater.
2. Top must be insulated to an R-8 or greater.
3. Pipes shall be insulated up to 3-foot minimum.

**8.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Section 2.1.

**9.0 AIR INFILTRATION REDUCTION**

It is the intent of this portion of the program to save energy through reduction of unintended air infiltration into conditioned spaces of older homes.

**9.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.
3. Must be able to achieve an infiltration reduction of at least 1,500 cfm at 50 pascals.
4. Home must meet ASHRA Standard 90.2 as a minimum air infiltration level once infiltration sealing is completed.

**9.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

Contractor must use a blower door and a manometer for precise pressure measurements.

**9.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Section 2.1 and 6.3.

**10.0 COMPACT FLUORESCENT BULBS/LED BULBS, WATER SAVING SHOWERHEADS AND FAUCET AERATORS**

**10.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.

Measure	Participation Requirements	Equipment and Installation
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		<b>Specifications</b>
Water Saving Showerhead	<ul style="list-style-type: none"> <li>• Electric Water Heater</li> <li>• Current showerhead flow of 3.5 gallon per minute or greater</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> </ul>
Compact Fluorescent Light Bulb LED Light Bulb	<ul style="list-style-type: none"> <li>• 15 or 18 watt compact fluorescent replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> <li>• 9 watt LED replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Must not be installed on a dimming circuit</li> <li>• Must not be installed in an enclosed fixture</li> <li>• Must be interior use only</li> </ul>
Faucet aerators	<ul style="list-style-type: none"> <li>• No aerators currently installed</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Threads must be compatible with existing faucet threads</li> </ul>

## 10.2 CONTRACTOR REQUIREMENTS

Must meet the Contractor Requirements outlined in Section 2.1.

## 11.0 REFRIGERATOR REPLACEMENTS

### 11.1 PARTICIPATION REQUIREMENTS

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.

### 11.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS

1. New refrigerator must be Energy Star rated.
2. Old refrigerator must be decommissioned and recycled appropriately.
3. Old refrigerator must be metered for 2 hours w/o defrost cycle, or metered for 24



hours to make sure that usage is over 900 kWh per year.

4. Replacement refrigerator must be top freezer, no through the door ice maker, no water dispenser, white or black, 18 to 21 cubic feet.

### **11.3 CONTRACTOR REQUIREMENTS**

1. Must meet the contractor requirements outlined in section 2.1.
2. Contractor is responsible for removing old refrigerator from home and will put a hole through old unit and/or cut the cord so it cannot be reused.

### **12.0 INCENTIVE PROCESSING**

Incentives will be paid directly to the Agencies. Agencies are required to submit the following information along with all invoices by the tenth workday of each month (not to exceed forty-five (45) days from the date of installation):

- Customer information - including name, address, and DEF account number.
- A list of installed measures and, where appropriate, pre-existing conditions
- Pre and post CFM 50 readings
- Itemized invoice with a brief description of installed measures (incentive measures only) and program incentive for each weatherized home, or the DEF/LIWAP data information form.

If the home is not selected for inspection, or after it has passed inspection, invoices will be processed for payment. DEF will input installed measures and paid incentives to a data base system. Submitted reports and invoices will be maintained on file.

### **13.0 REPORTING REQUIREMENTS**

DEF will follow the reporting requirements consistent with Rule 25-17.0021(5), Florida Administrative Code.

**DUKE ENERGY FLORIDA, LLC**

**PROGRAM PARTICIPATION STANDARDS**

**LOW-INCOME WEATHERIZATION ASSISTANCE PROGRAM**

**DUKE ENERGY FLORIDA, LLC**  
**PROGRAM PARTICIPATION STANDARDS**  
**LOW-INCOME WEATHERIZATION ASSISTANCE PROGRAM**

## **1.0 PROGRAM OVERVIEW**

Duke Energy Florida, LLC's (DEF) Low-income Weatherization Assistance Program (LIWAP) is a custom energy conservation program. Through its partnerships with local weatherization providers, DEF provides education about energy saving opportunities and installs energy efficiency measures in homes of qualifying low income customers. The LIWAP seeks to achieve the following goals:

1. Integrate DEF's LIWAP procedures with the Department of Economic Opportunity (DEO) and local weatherization providers (collectively referred to as "Agencies") to deliver energy efficiency measures to low-income families.
2. Identify and educate Agencies and low income customers about energy saving opportunities to upgrade their home's energy efficiency.
3. Increase low-income families' participation in DEF's DSM programs.
4. Minimize "lost opportunities" in the existing marketplace.

## **2.0 ELIGIBILITY REQUIREMENTS**

The eligibility requirements for LIWAP will align with the participating Agency's criteria or requirements for participation in their low income services. Additional requirements are as follows:

- The residence must be in DEF's service area and be a residentially metered customer with an active account.
- All installations must be accessible for verification by a DEF representative.
- Homes must be greater than two years old.
- Homes having previously received DEF incentives for listed measures are not eligible for the same measure.

## **2.1 CONTRACTOR REQUIREMENTS**

The Agencies are responsible for all work performed. Agencies may also use DEF participating contractors for attic insulation and duct testing/repair.

1. Agencies and their agents must have appropriate license(s) and comply with all appropriate federal, state, and local building and safety codes for all work performed.
2. All work performed must follow manufacturers' and DEF's specifications where applicable.
3. Agencies and their agents must correct any deficiencies found in the installation or materials identified by DEF.
4. Agencies shall indemnify and hold DEF harmless from any and all losses, liabilities, injuries, damages claims or costs whatsoever caused by items furnished or services rendered.
5. All DEF contractors shall indemnify and hold harmless DEF from any and all losses, liabilities, injuries, damages, claims or costs whatsoever caused by items furnished or services rendered.
6. DEF requires a minimum of the following insurance policies be in force by all participating contractors:
  - Workman's Compensation as required by law.
  - General Contractual and Automobile Bodily Injury Liability: \$100,000 per person and \$300,000 per occurrence.
  - General and Automobile Property Damage Liability: \$100,000 per occurrence.
  - General and Vehicle Liability policies endorsed: \$100,000 per occurrence to provide blanket coverage.

## 2.2 EQUIPMENT/MATERIALS AND INSTALLATION SPECIFICATIONS

All materials and installation specifications shall meet or exceed the following guidelines:

- Equipment must meet manufacturers' specification and installation procedures.
- All work shall be performed to constitute a finished product.
- Materials shall be free of defects and covered under warranty for at least one year.
- Installation procedures must comply with all federal, state and local codes.
- All equipment installations must meet manufacturer's instructions and specifications. Any contractor failing to meet manufacturer's specifications and DEF procedures may result in termination of participation in any or all DEF programs.

## 2.3 AGENCY RESPONSIBILITY

Agencies will be responsible for the following:

1. Qualify all participants using federal and state guidelines outlined in Section 2.
2. Follow the recommendations of the National Energy Audit Tool (NEAT), Agency assessment protocol or any DEF approved energy audit to determine eligible measures to be installed. Qualify and install measures by DEF's standards and procedures. All installations shall comply with DEF specifications (see Sections 4.2 through 10.2).
3. Provide DEF random access to the weatherized homes for program evaluation and inspection.
4. Deliver energy education to weatherization clients.
5. Invoice DEF for program approved installed measures on a monthly basis.

## 3.0 INCENTIVES AND ELIGIBLE MEASURES

Duke Energy will provide incentives for the following measures with the stipulation that all requirements and minimum levels are achieved where applicable:

Weatherization Measure	Minimum Measure Requirement	Maximum Incentive Amount	Additional Requirements

Attic Insulation	Insulate homes with R5 or less to at least R-19 on residences with whole house electric air conditioning and/or electric heating	\$.50 per square foot up to a maximum of \$300 per home	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
Duct Leakage Test/ Repair	Repair Centrally Ducted Electric Heated and Cooled Systems	\$150	Completed Duct Test
Reduce Air Infiltration	Must demonstrate a minimum reduction of 1500 cfm at 50 pascals in electrically heated homes Not to exceed a minimum of 0.35 ACH	\$37.50	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
Electric Hot Water Reduction	Wrap electric water heater, insulate water pipes, lower temperature setting if needed, repair water leaks	\$20	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
HVAC Maintenance	Tune up on Centrally Ducted Electric Heated and Cooled Systems	\$150	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol
High Efficiency Heat Pump Replacing a Heat Pump	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,000	Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol. Incentive applicable on each new HP installed
High Efficiency Heat Pump Replacing Electric Resistance Heat	New HP must be a minimum 15 SEER and 8.2 HSPF	\$1,500	

Water Saving Showerheads	Maximum of 2.5 gallon per minute flow on homes with Electric Water Heaters	\$10 per showerhead	Maximum of 2 per home
Energy-efficient Light Bulbs	15 or 18 watt Compact Fluorescent replacing incandescent lamp greater than or equal to 60 watts	\$3.00 per lamp	Maximum of 6 light bulbs per household
	9 watt LED replacing incandescent lamp greater than or equal to 60 watts	\$4.50 per lamp	
Faucet Aerators	Water Flow Reduction on homes with Electric Water Heaters	\$5 per Aerator	Maximum of 2 per household
Refrigerator	Must be Energy Star rated	\$400	1 per household

**Notes:**

1. *In multi-family structures, DEF reserves the right to request bids from contractors to hold costs to a minimum.*
2. *Incentive amounts will be reviewed and compared to market prices annually and adjusted accordingly.*

**4. CEILING INSULATION****4.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol.
3. The home must be at least two years old.
4. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.
5. The weighted average R-value of the existing insulation over the total attic square footage (above conditioned space) must be less than R-11.
6. Any structure that has utilized any of DEF's ceiling insulation programs is not eligible to participate again. However, if the structure, through an act of God, loses the insulation **and** the loss is **not** covered by insurance, the structure is eligible to participate a second time. It is the customer's responsibility to provide DEF with a letter from his/her insurance company stating that the insulation was not covered.



7. The total ceiling area to be insulated must be greater than 100 square feet.
8. Mobile homes built after January 1, 1977 will be assumed to have an insulation value in excess of R-11 and will not be eligible to participate in this part of the LIWAP program unless documentation is provided to DEF stating that the actual existing insulation value is less than R-12.
9. Any home with “Knob and Tube Wiring” that is energized is not eligible. (Refer to: National Electrical Code, Article 324, Section 324-4).

#### **4.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. The insulation must be installed in accordance with the manufacturer’s recommendations and specifications.
2. All installations must result in an insulation value equal to or greater than R-19.
3. Flat roofs must have sufficient space to allow a minimum of 3 inches of air space above the insulation after insulation has been installed to the recommended R-value.
4. The insulation must be installed in the unconditioned space as a direct application to the attic area over the conditioned space.
5. The insulation must have a minimum clearance around all recessed lighting and gas-fired appliances as required by State, County and local codes.
6. The insulation must be installed uniformly, resulting in a minimum R-19 value throughout the entire area including knee walls. (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1.A.1 Walls Considered Ceiling Area).
7. All attic access panels that are located in conditioned space must be insulated with a minimum R-19 batt permanently attached.
8. Radiant barriers will not be allowed as a substitute in the LIWAP.
9. Ceilings with a rise greater than 5 and a run of 12 (5 over 12 pitch) shall not be insulated with blown-in (loose fill) insulation. Blown-in insulation shall not be used in attics where the distance from the top of the bottom chord of the truss or ceiling joist to the underside of the top chord of the trusses at the ridge is less than 30 inches and where obstructions to blown insulation exist (such as air conditioning ducts). (Refer to: Florida Building Code Chapter 13, sub section 6 Section 604.1ABC.1.1 Ceilings With Blown-In Insulation).

#### **4.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. The contractor will supply to the customer, in writing the number of bags installed, and leave with the customer an empty bag or manufacturer's literature in order to determine the required density of the insulation.
3. The contractor will attach an R-value Certification Card signed by the insulation contractor or his representative to the attic joist visible from the attic access. The card shall contain, at a minimum, the following information:
  - Manufacturer's name
  - Insulation type
  - R-Value of insulation installed
  - Thickness of insulation installed
  - Location of insulation installed
  - Name and address of the contractor installing the insulation
  - Date of installation

## **5. DUCT LEAKAGE REPAIR**

LIWAP duct repair is designed encourage weatherization providers to identify and repair duct leakage. Blower door or duct blaster equipment will be used as a diagnostic tool to locate duct leakage and provide quality control. This LIWAP component is available to all residential customers having a centrally ducted system with electric heating and cooling, provided the duct system is easily accessible.

### **5.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Repair recommendations must have been the result of a DEF-approved duct test, or follow the Agency approved protocol.
3. The customer's duct system and HVAC systems must be in adequate condition to accommodate the duct test, and not have been previously tested for the present occupant within a 5-year period.
4. The duct must be accessible for repair.
5. Homes must have centrally-ducted electric cooling and electric heat. If non-space heating combustion appliances exist (i.e., water heater, stove, etc.) then the house must pass a safety test prior to any duct sealing.

## **5.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Only mastic and fiber cloth or mastic with imbed fiber (mixed) may be used to seal the duct system. Duct tape may be used to hold the duct in place while the mastic is drying. If duct tape is used the mastic must cover the duct tape completely and extend a minimum of 2" past the width of the duct tape. Mastic must meet UL181 specifications for the material that the mastic is being applied to.
3. Blower door or duct blaster procedures must be followed as specified in training or manufacturer's instructions, unless otherwise directed by DEF when performing the duct test.

## **5.3 CONTRACTOR REQUIREMENTS**

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor.
3. All participating contractors must have attended and successfully completed a DEF-approved duct repair course. At a minimum, the training will consist of:
  - Training session on Building Science
  - Duct test applications (classroom and laboratory)
  - Duct test field applications
  - Codes and standards as they relate to duct sealing
4. Before any duct repairs can be made on homes with non-space heating combustion appliances the contractor shall follow the procedures as written in Chapter 4 of the "Duct Doctoring" instruction manual provided by the Florida Solar Energy Center Duct Diagnostics Training Course. The only exception is line 36, which deals with drilling a hole in the customer's vent pipe. This is not required. Instead of this procedure, DEF has adopted the National Fuel Gas Code's "Appendix H: Recommended Procedure for Safety Inspection of an Existing Appliance Installation."
5. A list of DEF contractors will be furnished to local weatherization providers for duct testing and repair. Providers will contract directly with DEF duct repair contractors for repair work.

## **5.4 INSPECTION REQUIREMENTS**

All inspectors must be trained in the area for which they are inspecting. If inspecting for the Duct Test and Leakage portion of this program, all inspectors must have attended and successfully completed the training offered by the Florida Solar Energy Center or similar course. At a minimum, the training will consist of:

- Training session on Building Science
- Duct test applications (classroom and laboratory)
- Duct test field applications
- Codes and standards as they relate to duct sealing

## **6. HIGH EFFICIENCY ELECTRIC HEAT PUMPS**

Promote the proper sizing and installation of high efficiency Heat Pump systems.

### **6.1 PARTICIPATION REQUIREMENTS**

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF-approved audit, or Agency assessment protocol.

### **6.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Installed equipment must be complete systems and shall be listed by Underwriters Laboratories or other nationally recognized testing laboratories in accordance with UL standards, as appropriate.
3. Both air handler and condensing units must be replaced.
4. The installed air handler/outdoor condensing unit combination must satisfy both the cooling and heating minimum efficiency requirements.
5. All equipment shall be new and not refurbished or have been previously installed or used.
6. Equipment efficiency ratings shall be obtained from a nationally recognized certification program directory or a manufacturer's rating certified to be in compliance with an approved Department of Energy (DOE) or Air Conditioning and Refrigeration Institute (ARI) rating procedure (standard 210/240-94). All cooling-mode efficiency ratings eligibility will be based on EER if available. (Note: If EER

ratings are not available then SEER will be used to determine cooling-mode eligibility. All heating-mode efficiency ratings eligibility will be based on HSPF, except for water source units.)

7. If the unit is sized larger than one ton (12,000 BTU) per 500 square feet of conditioned space, a manual J or ASHRAE approved sizing calculation must be submitted. The contractor must certify that the unit was sized according to manufacturer specifications. Exception: Manufactured homes are exempted from this requirement.
8. The contractor will certify that the unit was sized according to manufacturer specifications.
9. Refrigerant charge and type shall be according to manufacturer's specifications and recommendations for the unit installed. The contractor will certify that the proper charge is installed, that the unit is tested and is leak free.
10. Contractors shall certify that the airflow meets the manufacturer's recommendations and specifications for the system installed.
11. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 Btu or larger), that a hard start kit was installed either by the contractor or at the factory.
12. Return air filters shall be installed to meet manufacturer's specifications with no obstructions. Filters must be easily accessible and the location shown to the customer.
13. The contractor shall check that the controlling thermostat is properly leveled, that the anticipator is properly set, and the thermometer is correct to within two degrees Fahrenheit.
14. The contractor will be encouraged to use mastic on all new connections.
15. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
16. Heat pump must be all electric.

### **6.3 CONTRACTOR REQUIREMENTS**

1. Must meet Contractor Requirements in Section 2.1.
2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor in the jurisdiction having authority.

3. Contractors must demonstrate their capability to properly calculate heating and cooling loads by the Manual J method and to properly size and specify HVAC equipment.
4. The contractor must notify DEF within thirty (30) days if there was an emergency replacement due to equipment failure.
5. The Agency shall have six (6) months from date of installation to submit all “High Efficiency Equipment Forms” after which they will become ineligible for incentive.

## **7. HEATING AND AIR CONDITIONING MAINTENANCE (HVAC)**

Heating and air conditioning maintenance is designed to increase energy efficiency through proper operation of mechanical equipment. Agencies are encouraged to identify HVAC systems that could benefit from service maintenance to avoid future breakdowns.

### **7.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must have centrally ducted electric heating and cooling.

### **7.2 EQUIPMENT/SERVICE AND INSTALLATION SPECIFICATIONS**

The following represents the minimum requirement that must be performed by an approved contractor:

#### **Filter:**

- Inspect and clean filters
- Replace up to one inch throw-away filter
- Replace specialty filters if provided by customer

#### **System Controls and Operation:**

- Check thermostatic operation
- Cycle all controls
- Inspect for dirt and loose connections; clean and tighten as necessary
- Visually check all connections for refrigerant leaks
- Check refrigerant pressure and add as needed
- Check and record supply and return temperature

**Evaporator:**

- Inspect coil assembly and drip pan
- Clean coil and pan and flush as necessary
- Check drain line and blow out if necessary
- Apply algae treatment as required

**Blower and Blower Drive:**

- Oil blower motor if applicable
- Check motor bearings
- Check belt condition and tension; replace if necessary
- Check blower cleanliness; clean if necessary
- Check and record amp draw
- Check drive and pulley alignment
- Check for vibrations

**Condenser:**

- Lubricate condenser fan motor, if applicable
- Check motor bearings
- Check coil condition for dirt build-up and clean as necessary
- Clean condenser as needed

**Compressor:**

- Check electrical wire connections; clean and tighten where possible
- Check operation and condition
- Check and record operating amperage

**Heating System:**

- Check electric heat strips

**7.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Sections 2.1 and 6.3.

**8.0 WATER HEATER**

It is the intent of this portion of the program to save energy through adding additional insulation to older water heaters, set back temperatures, insulate pipes and replace older less efficient water heaters, and help defray the cost of a new high efficient water heater.

### **8.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation of a NEAT or DEF approved audit, or Agency assessment protocol.
3. Must have an electric water heater.

### **8.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. Sides must be wrapped with a minimum Insulation level equal to R-6 or greater.
2. Top must be insulated to an R-8 or greater.
3. Pipes shall be insulated up to 3-foot minimum.

### **8.3 CONTRACTOR REQUIREMENTS**

Must meet Contractor Requirements in Section 2.1.

### **9.0 AIR INFILTRATION REDUCTION**

It is the intent of this portion of the program to save energy through reduction of unintended air infiltration into conditioned spaces of older homes.

### **9.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.
3. Must be able to achieve an infiltration reduction of at least 1,500 cfm at 50 pascals.
4. Home must meet ASHRA Standard 90.2 as a minimum air infiltration level once infiltration sealing is completed.



## 9.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS

Contractor must use a blower door and a manometer for precise pressure measurements.

## 9.3 CONTRACTOR REQUIREMENTS

Must meet Contractor Requirements in Section 2.1 and 6.3.

## 10.0 COMPACT FLUORESCENT BULBS/LED BULBS, WATER SAVING SHOWERHEADS AND FAUCET AERATORS

### 10.1 PARTICIPATION REQUIREMENTS

1. Must meet the Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.

Measure	Participation Requirements	Equipment and Installation Specifications
Water Saving Showerhead	<ul style="list-style-type: none"> <li>• Electric Water Heater</li> <li>• Current showerhead flow of 3.5 gallon per minute or greater</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> </ul>
Compact Fluorescent Light Bulb  LED Light Bulb	<ul style="list-style-type: none"> <li>• 15 or 18 watt compact fluorescent replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> <li>• 9 watt LED replacing incandescent lamp greater than or equal to 60 watts operating a minimum of 3 hours per day</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Must not be installed on a dimming circuit</li> <li>• Must not be installed in an enclosed fixture</li> <li>• Must be interior use only</li> </ul>
Faucet aerators	<ul style="list-style-type: none"> <li>• No aerators currently installed</li> </ul>	<ul style="list-style-type: none"> <li>• Must meet manufacturer's specifications</li> <li>• Threads must be compatible with existing faucet threads</li> </ul>

## **10.2 CONTRACTOR REQUIREMENTS**

Must meet the Contractor Requirements outlined in Section 2.1.

## **11.0 REFRIGERATOR REPLACEMENTS**

### **11.1 PARTICIPATION REQUIREMENTS**

1. Must meet Eligibility Requirements outlined in Section 2.0.
2. Must be a recommendation from a NEAT or DEF-approved audit, or Agency assessment protocol.

### **11.2 EQUIPMENT AND INSTALLATION SPECIFICATIONS**

1. New refrigerator must be Energy Star rated.
2. Old refrigerator must be decommissioned and recycled appropriately.
3. Old refrigerator must be metered for 2 hours w/o defrost cycle, or metered for 24 hours to make sure that usage is over 900 kWh per year.
4. Replacement refrigerator must be top freezer, no through the door ice maker, no water dispenser, white or black, 18 to 21 cubic feet.

### **11.3 CONTRACTOR REQUIREMENTS**

1. Must meet the contractor requirements outlined in section 2.1.
2. Contractor is responsible for removing old refrigerator from home and will put a hole through old unit and/or cut the cord so it cannot be reused.

## **12.0 INCENTIVE PROCESSING**

Incentives will be paid directly to the Agencies. Agencies are required to submit the following information along with all invoices by the tenth workday of each month (not to exceed forty-five (45) days from the date of installation):

- Customer information - including name, address, and DEF account number.
- A list of installed measures and, where appropriate, pre-existing conditions

- Pre and post CFM 50 readings
- Itemized invoice with a brief description of installed measures (incentive measures only) and program incentive for each weatherized home, or the DEF/LIWAP data information form.

If the home is not selected for inspection, or after it has passed inspection, invoices will be processed for payment. DEF will input installed measures and paid incentives to a data base system. Submitted reports and invoices will be maintained on file.

### **13.0 REPORTING REQUIREMENTS**

DEF will follow the reporting requirements consistent with Rule 25-17.0021(5), Florida Administrative Code.