



**Florida
Power**
CORPORATION

JAMES A. MCGEE
SENIOR COUNSEL

January 9, 1997

97056-ET

Ms. Blanca S. Bayó, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, Florida 32399-0850

Re: Petition for approval of revised Program
Participation Standards for the Residential
Home Energy Improvement and
Residential New Construction Programs by
Florida Power Corporation

Dear Ms. Bayó:

Enclosed for filing in the subject docket are fifteen copies of Florida Power Corporation's Petition for approval of revised Program Participation Standards for the Residential Home Energy Improvement and Residential New Construction Programs.

Please acknowledge your receipt of the above filing on the enclosed copy of this letter and return to the undersigned. Also enclosed is a 3.5 inch diskette containing the above-referenced document in WordPerfect format. Thank you for your assistance in this matter.

Very truly yours,

James A. McGee

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GENERAL OFFICE

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for approval of revised Program Participation Standards for the Residential Home Energy Improvement and Residential New Construction Programs by Florida Power Corporation.

Docket No. 77056-01

Submitted for filing: January 10, 1997

P E T I T I O N

Florida Power Corporation ("Florida Power") hereby petitions the Florida Public Service Commission ("the Commission") for approval of certain revisions to the program participation standards for Florida Power's Residential Home Energy Improvement Program and its Residential New Construction Program. In support hereof, Florida Power states as follows:

Background

Program participation standards and revisions thereto are normally approved by Staff upon a determination that the standards conform with the program initially approved by the Commission. However, after discussions with Staff regarding the two program participation standards subject to this petition, Florida Power agreed that, because the proposed revisions include changes to incentive payment structure and efficiency standards which could effect the programs' cost-effectiveness, Commission approval of the revisions would be appropriate.

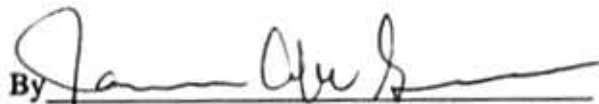
Discussion

The revised program participation standards for the Residential Home Energy Improvement Program and the Residential New Construction Program are contained in Attachments A and B, respectively. Attachments C and D show the revisions in legislative format. A detailed explanation of each of the proposed revisions to the two program participation standards are contained in Attachments E and F. Attachments G and H contain RIM, Participant and TRC cost-effectiveness tests for the Residential Home Energy Improvement and Residential New Construction Programs with the revised participation standards, which demonstrated that both programs are not materially affected by the revisions and remain cost effective.

WHEREFORE, Florida Power Corporation respectfully requests that the Commission approve the revised program participation standards for the Residential Home Energy Improvement Program and the Residential New Construction Program contained in Attachments A and B hereto.

Respectfully submitted,

OFFICE OF THE GENERAL COUNSEL
FLORIDA POWER CORPORATION

By 

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**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT A

**REVISED RESIDENTIAL HOME ENERGY IMPROVEMENT
PROGRAM PARTICIPATION STANDARDS**

PROGRAM PARTICIPATION STANDARDS HOME ENERGY IMPROVEMENT PROGRAM

1. PROGRAM OVERVIEW

The Home Energy Improvement (HEI) Program is an "umbrella" program designed to improve the energy efficiency of existing residential homes. The program seeks to meet the following overall goals:

1. Improve customer comfort levels through energy efficient equipment and home thermal integrity.
2. Obtain energy and demand reductions that are significant, permanent and measurable.
3. Enhance contractor awareness of the capabilities of energy efficient technologies.
4. Educate customers about additional opportunities to upgrade home energy efficiency.
5. Obtain cost-effective resources from the marketplace.
6. Minimize "lost opportunities" in the existing home market.

2. ELIGIBILITY REQUIREMENTS

1. All measures must have been recommended during an FPC energy audit. *Exception: In emergency cases the customer may have a heat pump and/or alternate water heating installed prior to an audit being conducted.*
2. The residence must be in FPC's service area and be a residential metered customer of FPC.
3. Do-it-yourself installations are not eligible for program participation. FPC participating contractors will be utilized to implement the incentive-based components of the HEI program. All work must be done by a participating licensed contractor who is on FPC's participating contractor list for the specific measure. *Exception: The Heating, Ventilation and Air Conditioning (HVAC) portion of this program will not have a participating contractor list.*
4. All installations must be accessible for verification of HEI program standards by an FPC representative.
5. New construction homes do not qualify under the HEI program.

2.1 Contractor Requirements

1. All contractors must comply with FPC contractor procedures and manufacturers' specifications specific to the portion of the HEI Program for which they are participating. Failure to do so may result in termination of participation in any or all FPC programs.
2. The contractor is responsible for the work to be performed, the supervision of their employees and the use of contractor's own equipment to meet the work specifications and completion date.
3. The contractor must correct any deficiency found in the installation or product when advised by an FPC representative.
4. The contractor shall indemnify and hold FPC harmless against any and all injuries, damages, claims or costs, whatsoever, caused by items furnished or services rendered.
5. The contractor must comply with all Federal, State, and local codes and regulations and have the appropriate license(s) for the work to be performed.
6. The Duct Test and Repair contractors and the Insulation contractors must notify their insurance companies to provide FPC with documentation and maintain in force the following insurance policies: *(Exception: Section 8 and Section 9 dealing with HVAC contractors is exempt from this provision.)*
 - 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.

3. INCENTIVES

The incentive's payment structure is as follows:

Program Component	Incentive
Duct Test	50% of test cost up to \$25 for the first unit tested
	50% of test cost up to \$15 for each additional unit at same address
Duct Leakage Repair	25% of the repair cost up to a maximum of \$50 per unit for homes with non-ducted electric heat
	50% of the repair cost up to a maximum of \$100 per unit for homes with ducted electric heat
Attic Insulation	\$75 to bring insulation level up to a minimum of R-19
	\$100 to bring insulation level up to a minimum of R-30
High Efficiency Heat Pump Replacing Resistance Heat	\$250 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.0 HSPF
	\$350 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 7.5 HSPF
High Efficiency Heat Pump Replacing Heat Pump	\$100 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.0 HSPF
	\$150 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 7.5 HSPF
Heat Recovery Unit	\$100
Dedicated Heat Pump Water Heater	\$200
Supplemental Incentive Bonus	\$25 for high efficiency electric heat pump and either ceiling insulation or duct leakage repair
	\$50 for high efficiency electric heat pump and ceiling insulation and duct leakage repair

Note:

1. A home is eligible to receive an incentive for each heat pump installed based on the efficiency level.
2. To qualify for the supplemental bonus, additional measures must be implemented within 90 days from the installation of the heat pump.
3. In multi-family structures, FPC reserves the right to request bids from contractors to hold customer costs to a minimum.

4. INCENTIVE PROCESSING

1. The FPC representative will complete an HEI Program form which will record as a minimum the following information: customer's name, address, account number, measure installed, equipment information (manufacturer, model numbers, EER or SEER, HSPF or COP).
2. The customer will sign and date the form, and retain a copy.
3. If the home is assigned for inspection, the original HEI Program form is given to the inspector. After the inspection has been successfully completed, the inspector returns the original form to FPC for payment processing.
4. A copy of the customer invoice must accompany the incentive application.
5. If the home is not assigned for inspection, or after it has passed inspection, contractors' invoices will be processed for payment.
6. FPC will then input "work completed" and "amount paid" to the computer system, and file a copy of the HEI Program form by customer name.
7. Incentive payments for duct test/repair and attic insulation are paid to the contractor with the exception of the supplemental bonus which is posted on the customer's electric bill. *HVAC incentives (high efficiency heat pump, heat recovery, and heat pump water heater) will be paid as a credit on the customers bill or a check to the customer.*

5. REPORTING REQUIREMENTS

The reporting requirements for this program will follow Rule 25-17.0021 (5) of the Florida Administrative Code.

6. CEILING INSULATION UPGRADE

6.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. The home must be at least two years old.
3. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.
4. The weighted average R-value of the existing insulation over the total attic square footage (above conditioned space) must be less than R-12.
5. Any structure that has utilized any of FPC'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 FPC with a letter from his/her insurance company stating that the insulation was not covered.
6. The total ceiling area to be insulated must be greater than 500 square feet.
7. 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 HEI Program unless documentation is provided to FPC stating that the actual existing insulation value is less than R-12.
8. Any home with "Knob and Tube Wiring" that is energized is not eligible ¹

6.2 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 or R-30. Insulation shall be added in increments of either R-11, R-19, R-22, or R-30.
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.

¹ National Electrical Code 1990, Article 324, Section 324-4

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.²
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 HEI Program.
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).³

6.3 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

² Florida "1993 Energy Efficiency Code for Building Construction" Section 604.1.A.1 Walls Considered Ceiling Area

³ Florida "1993 Energy Efficiency Code for Building Construction" Section 604.1.A.B.C.1.1 Ceilings With Blown-In Insulation

7. DUCT TEST AND LEAKAGE REPAIR

7.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. Repair recommendations must have been the result of an FPC-approved duct test.
3. The customer's duct system 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. Multi-family units where one unit is on top of another unit may not be tested or repaired due to health and safety concerns.
6. Homes must have centrally-ducted electric cooling and electric heat. If non-space heating combustion appliances exist, then the house must pass a safety test prior to any duct sealing.
7. Duct and HVAC systems must be in adequate condition to accommodate duct leakage repair

7.2 Equipment and Installation Specifications

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Only mastic and mastic-plus-embedded fabric systems that are approved by FPC may be used for sealing duct systems. Mastic must be FPC-approved for the type of duct to which the mastic is applied.
3. Blower door or duct blaster procedures must be followed as specified in training or manufacturer's instructions, unless otherwise directed by FPC when performing the duct test.

7.3 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 an FPC-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 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, FPC has adopted the National Fuel Gas Code's "Appendix H: Recommended Procedure for Safety Inspection of an Existing Appliance Installation."

7.4 INSPECTION REQUIREMENTS

1. 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

8. HIGH EFFICIENCY ELECTRIC HEAT PUMPS

8.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. The customer must have had an audit within the past two years.

8.2 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. All cooling-mode efficiency ratings eligibility will be based on EER if available.⁴
7. The contractor will certify that the unit was sized according to manufacturers specifications.
8. 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.
9. Contractors shall certify that the air flow meets the manufacturer's recommendations and specifications for the system installed.
10. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 BTU/h or larger), that a hard start kit was installed either by the contractor or at the factory.

⁴ 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 which will use the COP value listed.

11. 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.
12. 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.
13. The contractor will be encouraged to use mastic on all new connections.
14. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
15. Heat pump must be all electric.
16. Each contractor will be paid a maximum of \$25 per customer account for completing necessary paperwork on eligible installations

8.3 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. 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 FPC within 30 days if there was an emergency replacement due to equipment failure.

9. HIGH EFFICIENCY ALTERNATE ELECTRIC WATER HEATING

9.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. The customer must have had an audit within the past two years.

9.2 Equipment and Installation Specifications

1. All heat recovery units must be installed in accordance with manufacturer's 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. Heat recovery water heaters must be equipped with a circulating pump and must be Association of Refrigerant Desuperheater Manufacturers (ARDM) certified.
4. Heat recovery or dedicated heat pump water heaters must be installed on an electric water heater.
5. All equipment shall be new and not refurbished, previously installed, or used.
6. Each contractor will be paid a maximum of \$25 per customer account for completing necessary paperwork on eligible installations.

9.3 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. A copy of the customer invoice itemizing equipment costs, non-equipment costs, and the FPC incentive amount must accompany the incentive application.
4. The contractor must notify FPC within 30 days if there was an emergency replacement due to equipment failure.

10. HIGH EFFICIENCY ELECTRIC CENTRAL AIR CONDITIONERS

10.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. Must meet the Participation Requirements outlined in Section 8.1.

10.2 Equipment and Installation Specifications

1. Must meet the Equipment and Installation Specifications outlined in Section 8.2.

10.3 Contractor Qualification Requirements

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. Must meet the Contractor Requirements outlined in Section 8.3.

11. INSTALLMENT BILLING

1. As an alternative to receiving an incentive payment, customers may opt to finance up to a maximum of \$500 through installment billing. For each measure, a customer can use installment billing to finance up to 90% of the total installed cost or repair cost.
2. Installment billing allows the customer to spread the cost over 12 months interest free. The installment billing payments will appear as a separate line item on the customer's monthly electricity bill from FPC.
3. Installment billing can be used for any combination of the following qualified measures: ceiling insulation upgrade, duct leakage repair, high efficiency electric heat pump, heat recovery unit, and dedicated heat pump water heater.
4. If the customer installs additional qualified measures, a new installment billing arrangement can be set up only after the initial or current "loan" is paid off.
5. The customer must own the home in which the improvements are being made. The customer shall not have been cut for non-payment, received a credit extension or have any returned checks within the past two years.

12. FINANCING ASSISTANCE

1. Financing Assistance is another alternative to the direct incentive payment. FPC will work with finance companies and attempt to offer eligible program participants a financing option at below market rates. Eligible customers may apply appropriate program incentives to reduce the principle amount or to lower interest rates on installment loans.
2. The finance company will qualify the borrower and arrange for the loan using their normal procedures.
3. FPC will coordinate with HVAC contractors and various finance companies to offer reduced interest loans on mechanical installations.
4. HVAC contractors will be responsible for presenting incentive options to the customer and arranging financing with participating finance companies, as needed.

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT B

**REVISED RESIDENTIAL NEW CONSTRUCTION
PROGRAM PARTICIPATION STANDARDS**

PROGRAM PARTICIPATION STANDARDS

RESIDENTIAL NEW CONSTRUCTION PROGRAM

1. PROGRAM OVERVIEW

The Residential New Construction (RNC) Program promotes energy efficient new home construction in order to provide residential customers with more efficient cooling and heating consumption combined with improved environmental comfort. The objectives of the RNC Program include the following:

1. Educate home builders and manufacturers about energy efficient new construction building design to create a supply of efficient homes.
2. Educate customers and real estate agents about the benefits of energy efficient home design to create the demand for energy efficient homes.
3. Obtain energy and demand impacts that are significant, permanent, and measurable.
4. Obtain cost-effective resources from the marketplace.
5. Minimize "lost opportunities" in the new construction market.

The program will provide education and information to the design community on energy efficient building design and construction, pay for the cost of duct testing to educate builders, provide financial incentives for energy efficient equipment, issue a certificate which identifies the home as energy efficient, and offer cooperative advertising to the more energy efficient developers and builders to promote the RNC Program.

2. ELIGIBILITY REQUIREMENTS

1. The home must be either single family detached or single family attached (e.g. townhouses).
2. The home must be new -- additions do not qualify for this RNC program.
3. The home must be built by an RNC Program-certified builder or manufacturer meeting FPC standards. The builder must be a licensed building contractor and must comply with all Federal, State, and local codes. Manufacturer must comply with all HUD requirements.
4. The house must be accessible for verification of RNC Program standards by an FPC representative.
5. The home must be located in FPC's service area and must be metered by FPC.
6. The heating source must be a high efficiency electric heat pump(s). No resistance heat is allowed except as back-up supplemental heat.

2.1 Equipment and Installation Specifications

1. All equipment installations must meet manufacturer's instructions and specifications. Any contractor failing to meet manufacturer's specifications and FPC procedures may result in termination of participation in any or all FPC programs.
2. Equipment specification shall be according to Air Conditioning and Refrigeration Institute and Department of Energy test standards or by an FPC-recognized engineering standard using sound engineering estimates.
3. Minimum wall insulation is R-4 for masonry and R-11 for frame.
4. Equipment information such as model numbers, manufacturers, and Btuh capacity shall be made accessible to the FPC representative.
5. All materials used to seal duct systems must be approved by FPC.
6. Heat recovery water heaters must be equipped with a circulating pump and must be Association of Refrigerant Desuperheater Manufacturers (ARDM) certified, and be installed on an electric water heater.
7. If the equipment installed uses a scroll compressor 36,001 Btuh or larger, the air conditioning contractor or builder shall certify that a hard start kit was installed by the air conditioning contractor or the factory.
8. Heat pump must be all electric.

2.2 Contractor¹ Requirements

1. Contractors shall certify that the air flow meets manufacturer's specifications and recommendations for the system installed.
2. Refrigerant charge and type shall follow manufacturer's recommendations for the unit installed. The contractor will certify that the unit has been tested and is leak free.
3. All participating contractors must comply with FPC contractor procedures specific to the level for which they are participating.
4. All builders or manufacturers currently on the "Trade Efficiency Program" are to be grandfathered into the RNC Program at Level One. It is the responsibility of the FPC representative to encourage each builder to move up to either Level Two or Level Three.
5. The contractor must correct any deficiency found in the installation or product when advised by an FPC representative.

¹ Contractor and manufacturer are synonymous.

6. The contractor shall indemnify and hold FPC harmless against any and all injuries, damages, claims or costs whatsoever caused by items furnished or services rendered
7. Must meet the RNC technical specifications of either Level One, Level Two, or Level Three.
8. If the builder has a model center, FPC will pay to test the duct system for one home per model center to educate the builder as to why duct leakage is undesirable. If the builder does not have a model center, the builder's residence or the home the builder is currently constructing may be used for demonstration purposes.
9. The builder or his representative and the builder's air conditioning contractor must be present at the time the educational duct test is conducted. If the builder agrees to participate in Level One prior to the educational test, and the air conditioning contractor is familiar with the RNC Program requirements, then no test is required. If an educational duct test is required, an FPC representative must be present.
10. The builder must correct any problems discovered during the duct test before that builder may become certified in the RNC Program.

3. TECHNICAL SPECIFICATIONS ON EQUIPMENT ELIGIBILITY

The RNC Program defines three levels of eligibility and various options within each level with which a home builder may comply in order to receive home certification.

3.1 Level One

Must incorporate any changes to the duct system that are indicated by the educational duct test, and construct duct systems which meet FPC standards.

3.2 Level Two

Meet Level One requirements, and install a high efficiency heat pump with a minimum cooling efficiency of 10.2 EER² (Energy Efficiency Rating), or 11.5 SEER (Seasonal Energy Efficiency Rating), with a minimum heating efficiency of 7.0 HSPF (Heating Season Performance Factor), or install a higher efficiency heat pump with a minimum cooling efficiency of 11.0 EER² or 12.5 SEER, with a minimum heating efficiency of 7.5 HSPF. Ground source heat pumps must achieve a 2.9 COP (Coefficient of Performance) or higher. *Plus one of the following:*

1. Construct duct system in accordance with Manual D (a duct layout diagram must be provided)
2. Install a minimum of R-30 attic insulation.
3. Install a heat recovery unit.

² NOTE: If the EER value for the unit is available from the manufacturer, then the unit must satisfy the minimum EER criteria. Only if the cooling EER value is not available from the manufacturer may the unit comply with minimum cooling efficiency requirements using the SEER value. All HVAC equipment must be sized in accordance with Manual J.

4. Install a dedicated heat pump water heater.

3.3 Level Three

Homes built under this level shall be at least 30 percent more efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC) as defined by the US Environmental Protection Agency's (EPA) Energy Star Program.

3.4 Cooperative Advertising

The following specifications must be met to be eligible for cooperative advertising:

1. Homes must be built to Level Three specifications.
2. Advertising may be applied to billboards, Parade of Homes, realtor magazines, or other long-life publications approved by FPC.
3. FPC must approve the advertising prior to placing the ad.
4. FPC reserves the right to withhold payment for advertising which is untruthful or offensive; FPC shall be the final judge.

4. INCENTIVES

The incentive payment structure builds on thermal and mechanical efficiencies as follows

Level	Incentive		Requirements	Minimum Cooling Efficiency		Minimum Heating Efficiency	
				EER	SEER	HSPF	COP
Level One	One Free Educational Duct Test		Home must have centrally ducted system				
Level Two	Incentive from Level One Plus	\$100	Level One and electric heat pump, plus Manual D duct design or R-30 attic insulation	10.2	11.5	7.0	2.9
		\$200	Level One and electric heat pump, plus Heat Recovery Unit				
		\$300	Level One and electric heat pump, plus a Dedicated Heat Pump Water Heater				
		\$300	Level One and electric heat pump, plus Manual D duct design or R-30 attic insulation	11.0	12.5	7.5	3.0
		\$400	Level One and electric heat pump, plus a Heat Recovery Unit				
		\$500	Level One and electric heat pump, plus a Dedicated Heat Pump Water Heater				
Level Three	Level Two incentives apply for mechanical equipment Plus FPC will match on a 50/50 basis up to \$50 for Co-Op Advertising		Home must be at least 30 percent more energy efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC)				

5. INCENTIVE PROCESSING

1. The FPC representative will complete an RNC Program form which will record as a minimum the following information: builder's name, subdivision, address or lot and block of certified home, Level number, equipment information (manufacturer, model numbers, EER or SEER, HSPF or COP).
2. The builder will sign and date the form, and retain a copy.
3. If the home is assigned for inspection, the original RNC Program form is given to the inspector. After the inspection has been successfully completed, the inspector returns the original form to FPC for payment processing.
4. If the home is not assigned for inspection, or after it has passed inspection, builders invoices will be processed for payment.
5. FPC will then input "work completed" and "amount paid" to the computer system, and file a copy of the program form by builder.

6. REPORTING REQUIREMENTS

The reporting requirements for this program will follow Rule 25-17.0021 (5) of the Florida Administrative Code.

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT C

**REVISED RESIDENTIAL HOME ENERGY IMPROVEMENT
PROGRAM PARTICIPATION STANDARDS
(Legislative Format)**

PROGRAM PARTICIPATION STANDARDS HOME ENERGY IMPROVEMENT PROGRAM (LEGISLATIVE FORMAT)

1. PROGRAM OVERVIEW

The Home Energy Improvement (HEI) Program is an "umbrella" program designed to improve the energy efficiency of existing residential homes. The program seeks to meet the following overall goals:

1. Improve customer comfort levels through energy efficient equipment and home thermal integrity.
2. Obtain energy and demand reductions that are significant, permanent and measurable.
3. Enhance contractor awareness of the capabilities of energy efficient technologies.
4. Educate customers about additional opportunities to upgrade home energy efficiency.
5. Obtain cost-effective resources from the marketplace.
6. Minimize "lost opportunities" in the existing home market.

2. ELIGIBILITY REQUIREMENTS

1. All measures must have been recommended during an FPC energy audit. *Exception: In emergency cases the customer may have a heat pump and/or alternate water heating installed prior to an audit being conducted.*
2. The residence must be in FPC's service area and be a residential metered customer of FPC.
3. Do-it-yourself installations are not eligible for program participation. FPC participating contractors will be utilized to implement the incentive-based components of the HEI program. All work must be done by a participating licensed contractor who is on FPC's participating contractor list for the specific measure. *Exception: The Heating, Ventilation and Air Conditioning (HVAC) portion of this program will not have a participating contractor list.*
4. All installations must be accessible for verification of HEI program standards by an FPC representative.
5. New construction homes do not qualify under the HEI program.

2.1 Contractor Requirements

1. All contractors must comply with FPC contractor procedures and manufacturers' specifications specific to the portion of the HEI Program for which they are participating. Failure to do so may result in termination of participation in any or all FPC programs.
2. The contractor is responsible for the work to be performed, the supervision of their employees and the use of contractor's own equipment to meet the work specifications and completion date.
3. The contractor must correct any deficiency found in the installation or product when advised by an FPC representative.
4. The contractor shall indemnify and hold FPC harmless against any and all injuries, damages, claims or costs, whatsoever, caused by items furnished or services rendered.
5. The contractor must comply with all Federal, State, and local codes and regulations and have the appropriate license(s) for the work to be performed.
6. The Duct Test and Repair contractors and the Insulation contractors must notify their insurance companies to provide FPC with documentation and maintain in force the following insurance policies: (Exception: Section 8 and Section 9 dealing with HVAC contractors is exempt from this provision.)
 - 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.

3. INCENTIVES

The incentives payment structure is as follows:

Program Component	Incentive
Duct Test	50% of test cost up to \$25 for the first unit tested
	50% of test cost up to \$15 for each additional unit at same address
Duct Leakage Repair	25% of the repair cost up to a maximum of \$50 per unit for homes with non-ducted electric heat
	50% of the repair cost up to a maximum of \$100 per unit for homes with ducted electric heat
Attic Insulation	\$75 to bring insulation level up to a minimum of R-19
	\$100 to bring insulation level up to a minimum of R-30
High-Efficiency Electric Heat Pump	\$100 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.5 HSPF/3.1 COP
	\$300 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 8.0 HSPF/3.3 COP
High Efficiency Heat Pump Replacing Resistance Heat	\$250 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.0 HSPF
	\$350 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 7.5 HSPF
High Efficiency Heat Pump Replacing Heat Pump	\$100 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.0 HSPF
	\$150 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 7.5 HSPF
Heat Recovery Unit	\$100
Dedicated Heat Pump Water Heater	\$200
Supplemental Incentive Bonus	\$25 for high efficiency electric heat pump and either ceiling insulation or duct leakage repair
	\$50 for high efficiency electric heat pump and ceiling insulation and duct leakage repair

Note:

1. A home is eligible to receive an incentive for each heat pump installed based on the efficiency level.
2. To qualify for the supplemental bonus, additional measures must be implemented within 90 days from the installation of the heat pump.
3. In multi-family structures, FPC reserves the right to request bids from contractors to hold customer costs to a minimum.

4. INCENTIVE PROCESSING

1. The FPC representative will complete an HEI Program form which will record as a minimum the following information: customer's name, address, account number, measure installed, equipment information (manufacturer, model numbers, EER or SEER, HSPF or COP).
2. The customer will sign and date the form, and retain a copy.
3. If the home is assigned for inspection, the original HEI Program form is given to the inspector. After the inspection has been successfully completed, the inspector returns the original form to FPC for payment processing.
4. A copy of the customer invoice (~~itemizing equipment costs, non-equipment costs and the FPC incentive amount~~), along with the ~~heating/cooling sizing documentation~~, must accompany the incentive application.
5. If the home is not assigned for inspection, or after it has passed inspection, contractors' invoices will be processed for payment.
6. FPC will then input "work completed" and "amount paid" to the computer system, and file a copy of the HEI Program form by customer name.
7. All Incentive payments for duct test/repair and attic insulation are paid to the contractor with the exception of the supplemental bonus which is posted on the customer's electric bill. HVAC incentives (high efficiency heat pump, heat recovery, and heat pump water heater) will be paid as a credit on the customers bill or a check to the customer.

5. REPORTING REQUIREMENTS

The reporting requirements for this program will follow Rule 25-17.0021 (5) of the Florida Administrative Code.

6. CEILING INSULATION UPGRADE

6.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. The home must be at least two years old.
3. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.
4. The weighted average R-value of the existing insulation over the total attic square footage (above conditioned space) must be less than R-12.
5. Any structure that has utilized any of FPC'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 FPC with a letter from his/her insurance company stating that the insulation was not covered.
6. The total ceiling area to be insulated must be greater than 500 square feet.
7. 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 HEI Program unless documentation is provided to FPC stating that the actual existing insulation value is less than R-12.
8. Any home with "Knob and Tube Wiring" that is energized is not eligible.¹

6.2 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 or R-30. Insulation shall be added in increments of either R-11, R-19, R-22, or R-30.
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.

¹ National Electrical Code 1990, Article 324, Section 324-4

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.²
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 HEI Program.
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).³

6.3 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

² Florida "1993 Energy Efficiency Code for Building Construction" Section 604.1.A.1 Walls Considered Ceiling Area

³ Florida "1993 Energy Efficiency Code for Building Construction" Section 604.1.A.B.C.1.1 Ceilings With Blown-In Insulation

7. DUCT TEST AND LEAKAGE REPAIR

7.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. Repair recommendations must have been the result of an FPC-approved duct test.
3. The customer's duct system 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. Multi-family units where one unit is on top of another unit may not be tested or repaired due to health and safety concerns.
6. Homes must have centrally-ducted electric cooling and electric heat. If non-space heating combustion appliances exist, then the house must pass a safety test prior to any duct sealing.
7. Duct and HVAC systems must be in adequate condition to accommodate duct leakage repair.

7.2 Equipment and Installation Specifications

1. All equipment installations must meet manufacturers' instructions and specifications.
2. Only mastic and mastic-plus-embedded fabric systems that are approved by FPC may be used for sealing duct systems. Mastic must be FPC-approved for the type of duct to which the mastic is applied.
3. Blower door or duct blaster procedures must be followed as specified in training or manufacturer's instructions, unless otherwise directed by FPC when performing the duct test.

7.3 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 an FPC-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 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, FPC has adopted the National Fuel Gas Code's "Appendix H: Recommended Procedure for Safety Inspection of an Existing Appliance Installation."

7.4 INSPECTION REQUIREMENTS

1. 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

8. HIGH EFFICIENCY ELECTRIC HEAT PUMPS

8.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. The customer must have had an audit within the past two years.

8.2 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. All cooling-mode efficiency ratings eligibility will be based on EER if available.⁴
- ~~7. An HVAC sizing calculation shall be performed by the contractor and shall be attached to the recommendation form when submitted for incentive payment. Cooling and heating design loads shall be determined using Air Conditioning Contractors of America (ACCA) Manual J, or FPC short form Manual J, or American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE). Copies must be provided to the customer. Design conditions shall be those applicable to the FPC service area in which the home is located.~~

⁴ 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 which will use the COP value listed.

- ~~8-7. Cooling unit sizing may not exceed the calculated whole house load by 15% or 6,000 BTUh, whichever is larger.⁵ The contractor will certify that the unit was sized according to manufacturers specifications.~~
- 9-8. 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.
- 10-9. Contractors shall certify that the air flow meets the manufacturer's recommendations and specifications for the system installed.
- 11-10. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 BTUh or larger), that a hard start kit was installed either by the contractor or at the factory.
- 12-11. 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.
- 13-12. 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.
- 14-13. ~~All duct connections to equipment being installed will be sealed using mastic and mastic plus embedded fabric systems that are approved by FPC. If local codes prohibit the use of mastic, pressure sensitive tape meeting UL 181A, Part 1 may be used on fibrous glass ductboard. Pressure sensitive tape applied to non-metal flexible duct shall meet UL 181B, Part 1 specifications. Heat activated tapes applied to fibrous glass ductboard shall meet UL 181A, Part 2. The contractor will be encouraged to use mastic on all new connections.~~
- 15-14. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
- 16-15. Heat pump must be all electric.
16. Each contractor will be paid a maximum of \$25 per customer account for completing necessary paperwork on eligible installations

8.3 Contractor Requirements

1. Must meet the Contractor Requirements outlined in Section 2.1.

⁵ Florida "1993 Energy Efficiency Code for Building Construction" Section 607.1.ABC.1.1 Allows for oversizing by 20 percent. FPC's program is 5 percent more stringent than the State Energy Code.

2. Must be a licensed Mechanical Contractor, Class A, B, or C Air Conditioning contractor.
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 FPC within 30 days if there was an emergency replacement due to equipment failure.

9. HIGH EFFICIENCY ALTERNATE ELECTRIC WATER HEATING

9.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. The customer must have had an audit within the past two years.

9.2 Equipment and Installation Specifications

1. All heat recovery units must be installed in accordance with manufacturer's 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. Heat recovery water heaters must be equipped with a circulating pump and must be Association of Refrigerant Desuperheater Manufacturers (ARDM) certified.
4. Heat recovery or dedicated heat pump water heaters must be installed on an electric water heater.
5. All equipment shall be new and not refurbished, previously installed, or used
6. Each contractor will be paid a maximum of \$25 per customer account for completing necessary paperwork on eligible installations.

9.3 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. A copy of the customer invoice itemizing equipment costs, non-equipment costs, and the FPC incentive amount must accompany the incentive application.
4. The contractor must notify FPC within 30 days if there was an emergency replacement due to equipment failure.

10. HIGH EFFICIENCY ELECTRIC CENTRAL AIR CONDITIONERS

10.1 Participation Requirements

1. Must meet the Eligibility Requirements outlined in Section 2.
2. Must meet the Participation Requirements outlined in Section 8.1.

10.2 Equipment and Installation Specifications

1. Must meet the Equipment and Installation Specifications outlined in Section 8.2.

10.3 Contractor Qualification Requirements

1. Must meet the Contractor Requirements outlined in Section 2.1.
2. Must meet the Contractor Requirements outlined in Section 8.3.

11. INSTALLMENT BILLING

1. As an alternative to receiving an incentive payment, customers may opt to finance up to a maximum of \$500 through installment billing. For each measure, a customer can use installment billing to finance up to 90% of the total installed cost or repair cost.
2. Installment billing allows the customer to spread the cost over 12 months interest free. The installment billing payments will appear as a separate line item on the customer's monthly electricity bill from FPC.
3. Installment billing can be used for any combination of the following qualified measures: ceiling insulation upgrade, duct leakage repair, high efficiency electric heat pump, heat recovery unit, and dedicated heat pump water heater.
4. If the customer installs additional qualified measures, a new installment billing arrangement can be set up only after the initial or current "loan" is paid off.
5. The customer must own the home in which the improvements are being made. The customer shall not have been cut for non-payment, received a credit extension or have any returned checks within the past two years.

12. FINANCING ASSISTANCE

1. Financing Assistance is another alternative to the direct incentive payment. FPC will work with finance companies and attempt to offer eligible program participants a financing option at below market rates. Eligible customers may apply appropriate program incentives to reduce the principle amount or to lower interest rates on installment loans.
2. The finance company will qualify the borrower and arrange for the loan using their normal procedures.
3. FPC will coordinate with HVAC contractors and various finance companies to offer reduced interest loans on mechanical installations.
4. HVAC contractors will be responsible for presenting incentive options to the customer and arranging financing with participating finance companies, as needed.
5. ~~Contractors are required to submit to FPC an invoice for the incentive amount and a copy of the customer invoice itemizing all costs.~~
6. ~~The finance company will pay the contractor the total amount to be financed minus the incentive amount.~~

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT D

**REVISED RESIDENTIAL NEW CONSTRUCTION
PROGRAM PARTICIPATION STANDARDS
(Legislative Format)**

PROGRAM PARTICIPATION STANDARDS
RESIDENTIAL NEW CONSTRUCTION PROGRAM
(Legislative Format)

1. PROGRAM OVERVIEW

The Residential New Construction (RNC) Program promotes energy efficient new home construction in order to provide residential customers with more efficient cooling and heating consumption combined with improved environmental comfort. The objectives of the RNC Program include the following:

1. Educate home builders and manufacturers about energy efficient new construction building design to create a supply of efficient homes.
2. Educate customers and real estate agents about the benefits of energy efficient home design to create the demand for energy efficient homes.
3. Obtain energy and demand impacts that are significant, permanent, and measurable.
4. Obtain cost-effective resources from the marketplace.
5. Minimize "lost opportunities" in the new construction market.

The program will provide education and information to the design community on energy efficient building design and construction, pay for the cost of duct testing to educate builders, provide financial incentives for energy efficient equipment, issue a certificate which identifies the home as energy efficient, and offer cooperative advertising to the more energy efficient developers and builders to promote the RNC Program.

2. ELIGIBILITY REQUIREMENTS

1. The home must be either single family detached or single family attached (e.g. townhouses).
2. The home must be new -- additions do not qualify for this RNC program.
3. The home must be built by an RNC Program-certified builder or manufacturer meeting FPC standards. The builder must be a licensed building contractor and must comply with all Federal, State, and local codes. Manufacturer must comply with all HUD requirements.
4. The house must be accessible for verification of RNC Program standards by an FPC representative.
5. The home must be located in FPC's service area and must be metered by FPC.
6. The heating source must be a high efficiency electric heat pump(s). No resistance heat is allowed except as back-up supplemental heat.

2.1 Equipment and Installation Specifications

1. All equipment installations must meet manufacturer's instructions and specifications. Any contractor failing to meet manufacturer's specifications and FPC procedures may result in termination of participation in any or all FPC programs.
2. ~~Cooling unit sizing may not exceed the calculated whole house load by 15% or 6,000 Btuh, whichever is larger.~~
- 3.2. Equipment specification shall be according to Air Conditioning and Refrigeration Institute and Department of Energy test standards or by an FPC-recognized engineering standard using sound engineering estimates.
- 4.3. Minimum wall insulation is R-4 for masonry and R-11 for frame.
- 5.4. Equipment information such as model numbers, manufacturers, and Btuh capacity shall be made accessible to the FPC representative.
- 6.5. All materials used to seal duct systems must be approved by FPC.
- 7.6. Heat recovery water heaters must be equipped with a circulating pump and must be Association of Refrigerant Desuperheater Manufacturers (ARDM) certified, and be installed on an electric water heater.
- 8.7. If the equipment installed uses a scroll compressor **36,001 Btuh or larger**, the air conditioning contractor or builder shall certify that a hard start kit was installed by the air conditioning contractor or the factory.
- 9.8. Heat pump must be all electric.

2.2 Contractor¹ Requirements

1. Contractors shall certify that the air flow meets manufacturer's specifications and recommendations for the system installed.
2. Refrigerant charge and type shall follow manufacturer's recommendations for the unit installed. The contractor will certify that the unit has been tested and is leak free.
3. All participating contractors must comply with FPC contractor procedures specific to the level for which they are participating.
4. All builders or manufacturers currently on the "Trade Efficiency Program" are to be grandfathered into the RNC Program at Level One. It is the responsibility of the FPC representative to encourage each builder to move up to either Level Two or Level Three.

¹ Contractor and manufacturer are synonymous.

5. The contractor must correct any deficiency found in the installation or product when advised by an FPC representative.
6. The contractor shall indemnify and hold FPC harmless against any and all injuries, damages, claims or costs whatsoever caused by items furnished or services rendered.
7. Must meet the RNC technical specifications of either Level One, Level Two, or Level Three.
8. If the builder has a model center, FPC will pay to test the duct system for one home per model center to educate the builder as to why duct leakage is undesirable. If the builder does not have a model center, the builder's residence or the home the builder is currently constructing may be used for demonstration purposes.
9. The builder or his representative and the builder's air conditioning contractor must be present at the time the educational duct test is conducted. If the builder agrees to participate in Level One prior to the educational test, and the air conditioning contractor is familiar with the RNC Program requirements, then no test is required. If an educational duct test is required, an FPC representative must be present.
10. The builder must correct any problems discovered during the duct test before that builder may become certified in the RNC Program.
- ~~11. Completed Manual J (or equivalent) forms, along with actual installed equipment nameplate data, must be submitted to FPC for each certified home. If any modifications are made to the model, such as adding square footage to conditioned area or glass, the model will be considered new, and a Manual J form will be required for that new model. Design conditions shall be those applicable to the FPC service area in which the house is located.~~

3. TECHNICAL SPECIFICATIONS ON EQUIPMENT ELIGIBILITY

The RNC Program defines three levels of eligibility and various options within each level with which a home builder may comply in order to receive home certification.

3.1 Level One

Must incorporate any changes to the duct system that are indicated by the educational duct test, and construct duct systems which meet FPC standards.

3.2 Level Two

Meet Level One requirements, *and* install a high efficiency heat pump with a minimum cooling efficiency of 10.2 EER² (Energy Efficiency Rating), or 11.5 SEER (Seasonal Energy Efficiency Rating), with a minimum heating efficiency of ~~7.5~~ 7.0 HSPF (Heating Season Performance Factor), *or install a higher*

² NOTE: If the EER value for the unit is available from the manufacturer, then the unit must satisfy the minimum EER criteria. Only if the cooling EER value is not available from the manufacturer may the unit comply with minimum cooling efficiency requirements using the SEER value. All HVAC equipment must be sized in accordance with Manual J.

efficiency heat pump with a minimum cooling efficiency of 11.0 EER² or 12.5 SEER, with a minimum heating efficiency of 7.5 HSPF. Ground source heat pumps must achieve a 3-4 2.9 COP (Coefficient of Performance) or higher. Plus one of the following:

1. Construct duct system in accordance with Manual D (a duct layout diagram must be provided)
2. Install a minimum of R-30 attic insulation.
3. Install a heat recovery unit.
4. Install a dedicated heat pump water heater.

3.3 Level Three

~~Meet Level One and Two requirements, and one of the following:~~

- ~~1. Install a higher efficiency heat pump with a minimum cooling efficiency of 11.0 EER¹ or 12.5 SEER, with a minimum heating efficiency of 8.0 HSPF. Ground source heat pumps must achieve a 3.3 COP or higher.~~
- ~~2. Install a heat recovery unit.~~
- ~~3. Install a dedicated heat pump water heater.~~

Homes built under this level shall be at least 30 percent more efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC) as defined by the US Environmental Protection Agency's (EPA) Energy Star Program.

3.4 Cooperative Advertising

The following specifications must be met to be eligible for cooperative advertising:

1. Homes must be built to Level Three specifications
2. Advertising may be applied to billboards, Parade of Homes, realtor magazines, or other long-life publications approved by FPC.
3. FPC must approve the advertising prior to placing the ad.
4. FPC reserves the right to withhold payment for advertising which is untruthful or offensive; FPC shall be the final judge.

4. INCENTIVES

The incentive payment structure builds on thermal and mechanical efficiencies as follows

Level	Incentive	Requirements	Minimum Cooling Efficiency		Minimum Heating Efficiency	
			EER	SEER	HSPF	COP
Level One	One Free Educational Duct Test	Home must have centrally ducted system				
Level Two	Incentive from Level One Plus	\$100 Level One and electric heat pump, plus Manual D duct design or R-30 attic insulation	10.2	11.5	7.5	3.1
		\$200 Level One and electric heat pump, plus Heat Recovery Unit	10.2	11.5	7.0	2.9
		\$300 Level One and electric heat pump, plus a Dedicated Heat Pump Water Heater				
		\$300 Level One and electric heat pump, plus Manual D duct design or R-30 attic insulation				
		\$400 Level One and electric heat pump, plus a Heat Recovery Unit	11.0	12.5	7.5	3.0
		\$500 Level One and electric heat pump, plus a Dedicated Heat Pump Water Heater				
Level Three	Incentives from Level One and Level Two Plus	\$100 Level One and Level Two, plus heat-recovery unit				
		\$200 Level One and Level Two, plus dedicated heat-pump-water-heater				
	Incentive from Level One Plus	\$300 Level One and Level Two, plus electric heat pump	11.0	12.5	8.0	3.3
		\$400 Level One and Level Two, plus electric heat pump and heat-recovery unit	11.0	12.5	8.0	3.3
		\$500 Level One and Level Two, plus electric heat pump and dedicated heat-pump-water-heater	11.0	12.5	8.0	3.3
		Up to \$50 FPC will match on a 50/50 basis for Co-Op Advertising				
Level Three	Level Two incentives apply for mechanical equipment Plus FPC will match on a 50/50 basis up to \$50 for Co-Op Advertising	Home must be at least 30 percent more energy efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC)				

Notes

- 1.—All centrally ducted HVAC equipment in each home must meet minimum efficiency requirements for the level of participation for which the home is certified—Example—A home has two heat pumps—One heat pump has a SEER of 11.5, the other has a SEER of 12.5—The home will be certified as a Level Two home—The incentive paid will be \$100 for the SEER of 11.5 and \$300 for the SEER of 12.5.

5. INCENTIVE PROCESSING

1. The FPC representative will complete an RNC Program form which will record as a minimum the following information: builder's name, subdivision, address or lot and block of certified home, Level number, equipment information (manufacturer, model numbers, EER or SEER, HSPF or COP).
2. The builder will sign and date the form, and retain a copy.
3. If the home is assigned for inspection, the original RNC Program form is given to the inspector. After the inspection has been successfully completed, the inspector returns the original form to FPC for payment processing.
4. If the home is not assigned for inspection, or after it has passed inspection, builders invoices will be processed for payment.
5. FPC will then input "work completed" and "amount paid" to the computer system, and file a copy of the program form by builder.

6. REPORTING REQUIREMENTS

The reporting requirements for this program will follow Rule 25-17.0021 (5) of the Florida Administrative Code.

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT E

**DETAILED EXPLANATION OF REVISIONS TO THE
RESIDENTIAL HOME ENERGY IMPROVEMENT
PROGRAM PARTICIPATION STANDARDS**

**Florida Power Corporation
Residential Home Energy Improvement Program
Proposed Revisions to the Program Participation Standards**

1. On page 2, "Contractor Requirements," Item number 6 is being revised as follows:
 6. The Duct Test and Repair contractors and the Insulation contractors must notify their insurance companies to provide FPC with documentation and maintain in force the following insurance policies: (Exception: Section 8 and Section 9 dealing with HVAC contractors is exempt from this provision.)
 - 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.

Insurance is required by the Department of Business and Professional Regulation for HVAC contractor licensing in the state of Florida. Duplication of this requirement is unnecessary and burdensome to implement

2. The proposed changes to page 3 deal with equipment efficiency levels and incentives. Regarding equipment efficiencies, FPC is requesting that the HSPF be changed from 7.5 to 7.0 and from 8.0 to 7.5, to match a greater potential of eligible units currently manufactured in this range. There are too few units with 12.0 or higher SEER's that meet the HSPF eligibility requirements. For example, there is only one package unit that meets the 12.0 SEER and 7.5 HSPF combination, and none that meet the higher SEER requirement.

FPC also requests a change to the incentive amounts noted in the table on page 3. When the incentive is based on the actual equipment being replaced, (heat pump replacing electric resistance heat) a higher incentive can then be offered to influence the customers purchasing decision. This is our objective in making this request. We believe more customers will request a high efficiency heat pump based on the higher incentive. Recent contractor and customer surveys have indicated that these changes are consistent with their concerns and will help us meet our objective.

Incorporating these changes would alter the table on page 3 as follows:

Program Component	Incentive
High Efficiency Electric Heat Pump	\$100 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.5 HSPF/3.1 COP
	\$300 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 8.0 HSPF/3.3 COP
High Efficiency Electric Heat Pump Replacement for Resistance Heat	\$250 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.0 HSPF
	\$350 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 7.5 HSPF
High Efficiency Electric Heat Pump Replacement for Heat Pump	\$100 for minimum cooling efficiency of 10.2 EER/12.0 SEER and minimum heating efficiency of 7.0 HSPF
	\$150 for minimum cooling efficiency of 11.0 EER/13.0 SEER and minimum heating efficiency of 7.5 HSPF

3. On page 4, "Incentive Processing," Item 5, the proposed changes are as follows:

5. ~~A copy of the customer invoice (itemizing equipment costs, non-equipment costs and the FPC incentive amount); along with the heating/cooling sizing documentation; must accompany the incentive application.~~

The requirement to itemize equipment costs from non-equipment cost is proprietary information, and should remain so. The strikeout dealing with sizing documentation is discussed in Section 8, Item 7 on page 10.

4. Contractor and customer surveys indicate that the rebate will be more effective if paid directly to the customer, as opposed to the contractor. The current structure eliminates smaller contractors from participating because of cash flow concerns. They simply can not afford to carry this incentive and wait for Florida Power Corporation to refund this amount. As a result FPC is proposing the following change in Section 4, Item 7, page 4.

7. All Incentive payments for duct test/repair and attic insulation are paid to the contractor with the exception of the supplemental bonus which is posted on the customer's electric bill. HVAC incentives (high efficiency heat pump, heat recovery, and heat pump water heater) will be paid as a credit on the customers bill or a check to the customer.

5. Section 6.1, Item 3, page 6, of the Ceiling Insulating Upgrade portion of this program, the proposed change is as follows:

3. Eligible residences must have whole house electric air conditioning and/or whole house electric heating.

This item was also to have been in the original filing and was omitted in error. This allows Florida Power Corporation to not pay for installing insulation without seeing a reduction in energy usage.

6. FPC requests approval to include the following as a new section labeled "7.4 Inspector Requirements" on page 9. It should have been included in the original filing, but was inadvertently omitted.

7.4 Inspector Requirements

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

7. In the High Efficiency Electric Heat Pump portion of this program, FPC proposes to delete Item 7 in Section 8.2 on page 10. The remaining items in Section 8.2 will also be renumbered to reflect this proposed deletion.

~~7. An HVAC sizing calculation shall be performed by the contractor and shall be attached to the recommendation form when submitted for incentive payment. Cooling and heating design loads shall be determined using Air Conditioning Contractors of America (ACCA) Manual J, or FPC short form Manual J, or American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. (ASHRAE). Copies must be provided to the customer. Design conditions shall be those applicable to the FPC service area in which the home is located.~~

Contractors are responsible for certifying that unit sizing is according to manufacturers' specifications.

8. In the High Efficiency Electric Heat Pump portion of this program, Section 8.2, Item 8, page 11, FPC proposes the following change:

~~8.7. Cooling unit sizing may not exceed the calculated whole house load by 15% or 6,000 BTUh, whichever is larger.⁵ The contractor will certify that the unit was sized according to manufacturers specifications.~~

This has the same meaning as the change above regarding sizing calculations.

9. Also under the High Efficiency Electric Heat Pump portion of this program, Section 8.2, Item 14, page 11, FPC proposes the following change:

~~14.13. All duct connections to equipment being installed will be sealed using mastic and mastic plus embedded fabric systems that are approved by FPC. If local codes prohibit the use of mastic, pressure sensitive tape meeting UL-181A, Part 1 may be used on fibrous glass ductboard. Pressure sensitive tape applied to non-metal flexible duct shall meet UL-181B, Part 1 specifications. Heat activated tapes applied to fibrous glass ductboard shall meet UL-181A, Part 2. The contractor will be encouraged to use mastic on all new connections.~~

It has been discovered during inspections that most contractors do not know how to use mastic properly. If there is any moisture on the duct connection the mastic will run off after the contractor has applied the mastic. The customer must be told not to run the A/C unit for several hours to one day, depending on the humidity, to allow the mastic to harden. It will take a few years to educate the A/C contractors and win their support for using mastic. For these reasons, Florida Power Corporation wishes to alter the above item in Section "8.2 Equipment and Installation Specifications" of the High Efficiency Electric Heat Pump program component.

10. In the High Efficiency Electric Heat Pumps portion of this program, on page 11, FPC proposes adding the following item to Section "8.2 Equipment and Installation Specifications":

16. Each contractor will be paid a maximum of \$25 per customer account for completing necessary paperwork on eligible installations.

A \$25 incentive for completing the paperwork and selling higher efficiency equipment will increase A/C contractor participation resulting in the sale of more energy efficient units.

11. In the High Efficiency Alternate Electric Water Heating portion of this program, FPC requests adding the following new provision on page 13, Section 9.2, under "Equipment and Installation Specifications":

6. Each contractor will be paid a maximum of \$25 per customer account for completing necessary paperwork on eligible installations.

Again, FPC believes a \$25 incentive for completing the paperwork and selling higher efficiency equipment will increase A/C contractor participation resulting in the sale of more energy efficient water heating units.

12. On page 15 Section 12, Items 5 and 6, will be deleted as follows:

- 5- ~~Contractors are required to submit to FPC an invoice for the incentive amount and a copy of the customer invoice itemizing all costs.~~
- 6- ~~The finance company will pay the contractor the total amount to be financed minus the incentive amount.~~

These two items deal with the contractor receiving the invoice. FPC is requesting this procedure to be changed to allow FPC to pay the customer. If approved, Items 5 and 6 would no longer be relevant.

13. A cost-effectiveness evaluation of the Home Energy Improvement Program containing the proposed revisions to the Participation Standards shows that the program passes all three of the Commission-approved tests of cost-effectiveness.

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT F

**DETAILED EXPLANATION OF REVISIONS TO THE
RESIDENTIAL NEW CONSTRUCTION
PROGRAM PARTICIPATION STANDARDS**

**Florida Power Corporation
Residential New Construction Program
Proposed Revisions to the Program Participation Standards**

1. On page 2 in the "Equipment and Installation Specifications" section, FPC proposes to delete Item 2, and renumber the remaining items.
 - 2- ~~Cooling unit sizing may not exceed the calculated whole house load by 15% or 6,000 BTUh, whichever is larger.~~

This requirement is not needed. The Florida State Energy Code for New Construction deals with sizing of equipment and it is by law the responsibility of local building officials.

2. On page 2 in the "Equipment and Installation Specifications," Item 7, the following addition is requested:
 - 7-6. Heat recovery water heaters must be equipped with a circulating pump and must be Association of Refrigerant Desuperheater Manufacturers (ARDM) certified, and be installed on an electric water heater.

This requirement is being added to assure that FPC is reducing electric energy usage when paying an incentive.

3. On page 3, Section "2.2 Contractor Requirements," the following section is requested to be deleted:
 - H- ~~Completed Manual J (or equivalent) forms, along with actual installed equipment nameplate data, must be submitted to FPC for each certified home. If any modifications are made to the model, such as adding square footage to conditioned area or glass, the model will be considered new, and a Manual J form will be required for that new model. Design conditions shall be those applicable to the FPC service area in which the house is located.~~

Proper sizing is required by the Florida State Energy Code.

4. On page 4, Section "3. Technical Specifications on Equipment Eligibility," FPC is requesting that the current equipment eligibility requirements under "Level Three" be incorporated under "Level Two." Also, FPC proposes lowering the HSPF from 7.5 to 7.0 and from 8.0 to 7.5, to match what is actually being manufactured. There are too few units with a SEER of 11.5 and 12.5 that have as high an HSPF as we are currently

requiring. For example, there is only one package unit that meets the 11.5 SEER and 7.5 HSPF requirement, and none which meet the higher SEER requirement.

In addition, FPC desires to participate in a National program called Energy Star. This program is offered by the United States Environmental Protection Agency (EPA), and allows FPC to use the EPA logo for identification purposes. FPC proposes a new Level Three that would incorporate the requirements of the Energy Star Program. Homes built under this level shall be at least 30 percent more efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC).

To accomplish these changes, FPC proposes the following changes to Section "3. Technical Specifications on Equipment Eligibility" on page 4:

3.2 Level Two

Meet Level One requirements, *and* install a high efficiency heat pump with a minimum cooling efficiency of 10.2 EER¹ (Energy Efficiency Rating), or 11.5 SEER (Seasonal Energy Efficiency Rating), with a minimum heating efficiency of ~~7.5~~ 7.0 HSPF (Heating Season Performance Factor), or install a higher efficiency heat pump with a minimum cooling efficiency of 11.0 EER¹ or 12.5 SEER, with a minimum heating efficiency of 7.5 HSPF. Ground source heat pumps must achieve a ~~3.4~~ 2.9 COP (Coefficient of Performance) or higher. *Plus one of the following:*

1. Construct duct system in accordance with Manual D (a duct layout diagram must be provided).
2. Install a minimum of R-30 attic insulation.
3. Install a heat recovery unit.
4. Install a dedicated heat pump water heater.

3.3 Level Three

~~Meet Level One and Two requirements, and one of the following:~~

1. ~~Install a higher efficiency heat pump with a minimum cooling efficiency of 11.0 EER¹ or 12.5 SEER, with a minimum heating efficiency of 8.0 HSPF. Ground source heat pumps must achieve a 3.3 COP or higher.~~
2. ~~Install a heat recovery unit.~~
3. ~~Install a dedicated heat pump water heater.~~

Homes built under this level shall be at least 30 percent more efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC) as defined by the US Environmental Protection Agency's (EPA) Energy Star Program.

5. Many of the same changes listed above also need to be incorporated into the table on page 6, Section "4. Incentives." That table will be revised as follows:

Level	Incentive		Requirements	Minimum Cooling Efficiency		Minimum Heating Efficiency	
				EER	SEER	HSPF	COP
Level One	One Free Educational Duct Test		Home must have centrally ducted system				
Level Two	Incentive from Level One Plus	\$100	Level One and electric heat pump, plus Manual D duct design or R-30 attic insulation	10.2	11.5	7.5	3.4
		\$200	Level One and electric heat pump, plus Heat Recovery Unit	10.2	11.5	7.0	2.9
		\$300	Level One and electric heat pump, plus a Dedicated Heat Pump Water Heater				
		\$300	Level One and electric heat pump, plus Manual D duct design or R-30 attic insulation				
		\$400	Level One and electric heat pump, plus a Heat Recovery Unit	11.0	12.5	7.5	3.0
		\$500	Level One and electric heat pump, plus a Dedicated Heat Pump Water Heater				
Level Three	Incentives from Level One and Level Two Plus	\$100	Level One and Level Two, plus heat-recovery unit				
		\$200	Level One and Level Two, plus dedicated heat-pump-water-heater				
	Incentive from Level One Plus	\$300	Level One and Level Two, plus electric heat-pump	11.0	12.5	8.0	3.3
		\$400	Level One and Level Two, plus electric heat-pump and heat-recovery-unit	11.0	12.5	8.0	3.3
		\$500	Level One and Level Two, plus electric heat-pump and dedicated heat-pump-water-heater	11.0	12.5	8.0	3.3
		Up to \$50	FPC will match on a 50/50 basis for Co-Op Advertising				
Level Three	Level Two incentives apply for mechanical equipment Plus FPC will match on a 50/50 basis up to \$50 for Co-Op Advertising		Home must be at least 30 percent more energy efficient than the Council of American Building Officials (CABO) 1993 Model Energy Code (MEC)				

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT G

**COST-EFFECTIVENESS TESTS FOR THE
RESIDENTIAL HOME ENERGY IMPROVEMENT PROGRAM
WITH REVISED PARTICIPATION STANDARDS**

PROGRAM: HOME ENERGY IMPROVEMENT

RATE IMPACT MEASURE TEST

YEAR	BENEFITS					COSTS								NET BENEFITS TO ALL CUSTOMERS \$1000I
	(1) FUEL & O & M SAVINGS \$1000I	(2) AVOIDED TAD CAP. COSTS \$1000I	(3) AVOIDED GEN. CAP. COSTS \$1000I	(4) REVENUE GAINS \$1000I	(5) TOTAL BENEFITS \$1000I	(6) FUEL & O & M INCREASE \$1000I	(7) INCREASED TAD CAP. COSTS \$1000I	(8) INCREASED GEN. CAP. COSTS \$1000I	(9) UTILITY PROGRAM COSTS \$1000I	(10) INCENTIVE PAYMENTS \$1000I	(11) REVENUE LOSSES \$1000I	(12) TOTAL COSTS \$1000I	(13)	
1995	1	0	0	0	0	0	0	0	0	0	0	0	0	
1996	U	0	0	0	0	0	0	0	0	0	0	0	0	
1997	214	701	0	0	915	0	0	0	594	1052	611	2257	1342	
1998	502	1502	0	0	2004	0	0	0	485	1474	1377	3336	1332	
1999	876	2559	0	0	3435	0	0	0	539	1946	2376	4881	-1426	
2000	616	3739	1442	0	5797	0	0	0	554	2405	3489	6448	-651	
2001	0	5214	4465	0	9679	1919	0	0	483	2912	4831	10269	-590	
2002	323	6630	0	0	8953	0	0	0	587	2864	6172	9723	-770	
2003	2269	8314	826	0	11409	0	0	0	642	3073	7640	11355	54	
2004	3331	9937	1486	0	13754	0	0	0	623	3123	8131	12877	877	
2005	1899	11855	2864	0	16818	0	0	0	679	3239	10740	14658	2160	
2006	1973	12353	3017	0	17343	0	0	0	0	0	11031	11031	6312	
2007	2072	12872	3119	0	18063	0	0	0	0	0	11336	11336	6727	
2008	1915	13413	3356	0	18684	0	0	0	0	0	11659	11659	7025	
2009	0	13976	9519	0	23495	1957	0	0	0	0	12035	13992	9503	
2010	0	14563	12948	0	27511	4752	0	0	0	0	12367	17119	10392	
2011	0	15175	15133	0	30308	5530	0	0	0	0	12703	18233	12075	
2012	0	15812	11202	0	27014	2922	0	0	0	0	13048	15970	11044	
2013	0	16476	10504	0	26980	2236	0	0	0	0	13382	15588	11382	
2014	0	17168	13229	0	30397	4316	0	0	0	0	13752	18088	12329	
2015	0	17889	12762	0	30651	3027	0	0	0	0	14131	17158	13483	
2016	0	18640	13533	0	32173	4473	0	0	0	0	14555	19028	13145	
2017	0	19423	12801	0	32224	2967	0	0	0	0	14937	17804	14420	
2018	0	20239	14588	0	34827	4378	0	0	0	0	15367	19745	15082	
2019	0	21089	14444	0	35533	3879	0	0	0	0	15783	19662	15871	
2020	0	21975	16400	0	38375	5545	0	0	0	0	16224	21769	16606	
2021	0	22898	15934	0	38932	3991	0	0	0	0	16895	20689	18146	
2022	0	23860	17470	0	41330	7119	0	0	0	0	17145	24264	17066	
2023	0	24892	16540	0	41402	4731	0	0	0	0	17634	22365	18037	
2024	0	25908	18414	0	44320	6486	0	0	0	0	18157	24643	19677	
2025	0	26994	17938	0	44932	5164	0	0	0	0	18598	23762	21170	
NOMINAL	17090	426034	264034	0	707158	75292	0	0	5310	22188	336886	438676	267482	
NPV	8249	95462	49510	0	153221	13070	0	0	3250	12914	79811	108044	44177	

UTILITY DISCOUNT RATE: 8.67%
 BENEFIT/COST RATIO (COL. 5/COL. 12): 1.41

PROGRAM: HOME ENERGY IMPROVEMENT

PARTICIPANT TEST

YEAR	BENEFITS			COSTS			(8) NET BENEFITS TO PARTICIPANTS \$(1000)
	(1) SAVINGS IN PARTICIPANT'S BILL \$(1000)	(2) INCENTIVE PAYMENTS \$(1000)	(3) OTHER PARTICIPANT BENEFITS \$(1000)	(4) TOTAL BENEFITS \$(1000)	(5) PARTICIPANT COSTS \$(1000)	(6) PARTICIPANT'S BILL INCREASE \$(1000)	
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	611	1052	0	1663	2727	0	2727
1998	1377	1474	0	2851	3795	0	3795
1999	2376	1946	0	4322	4916	0	4916
2000	3489	2405	0	5894	6079	0	6079
2001	4831	2912	0	7743	7286	0	7286
2002	6172	2964	0	9136	7510	0	7510
2003	7640	3073	0	10713	7735	0	7735
2004	9131	3123	0	12254	7949	0	7949
2005	10740	3239	0	13979	8171	0	8171
2006	11031	0	0	11031	33	0	33
2007	11336	0	0	11336	35	0	35
2008	11659	0	0	11659	36	0	36
2009	12035	0	0	12035	37	0	37
2010	12367	0	0	12367	39	0	39
2011	12703	0	0	12703	40	0	40
2012	13048	0	0	13048	2649	0	2649
2013	13362	0	0	13362	4278	0	4278
2014	13752	0	0	13752	5995	0	5995
2015	14131	0	0	14131	7787	0	7787
2016	14555	0	0	14555	9656	0	9656
2017	14937	0	0	14937	10151	0	10151
2018	15367	0	0	15367	10640	0	10640
2019	15783	0	0	15783	11115	0	11115
2020	16224	0	0	16224	11593	0	11593
2021	16695	0	0	16695	937	0	937
2022	17145	0	0	17145	940	0	940
2023	17634	0	0	17634	954	0	954
2024	18157	0	0	18157	956	0	956
2025	18598	0	0	18598	966	0	966
NOMINAL	336886	22188	0	359074	135005	0	135005
NPV	79811	12914	0	92725	45419	0	45419

UTILITY DISCOUNT RATE: 8.67%
BENEFIT/COST RATIO (COL. 4/COL. 7): 2.04

PROGRAM: HOME ENERGY IMPROVEMENT

TOTAL RESOURCE COST TEST

YEAR	BENEFITS				COSTS							NET BENEFITS \$1000
	(1) TOTAL FUEL & O&M SAVINGS \$1000	(2) AVOIDED T&D CAP. COSTS \$1000	(3) AVOIDED GEN. CAP. COSTS \$1000	(4) OTHER PARTICIPANT BENEFITS \$1000	(5) TOTAL BENEFITS \$1000	(6) PARTICIPANT COSTS \$1000	(7) TOTAL FUEL & O&M INCREASE \$1000	(8) INCREASED T&D CAP. COSTS \$1000	(9) INCREASED GEN. CAP. COSTS \$1000	(10) UTILITY PROGRAM COSTS \$1000	(11) TOTAL COSTS \$1000	
1995	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0
1997	214	701	0	0	915	2727	0	0	584	3321	-2406	
1998	502	1502	0	0	2004	3795	0	0	485	4280	-2278	
1999	876	2559	0	0	3435	4816	0	0	539	5455	-2020	
2000	616	3739	1442	0	5797	6079	0	0	554	6633	-836	
2001	0	5214	4465	0	9679	7288	1919	0	607	9912	-133	
2002	2323	6630	0	0	8953	7510	0	0	587	8097	856	
2003	2269	8314	826	0	11409	7735	0	0	642	8377	3032	
2004	2331	9937	1486	0	13754	7949	0	0	623	8572	5182	
2005	1999	11855	2964	0	16818	8171	0	0	679	8850	7968	
2006	1973	12353	3017	0	17343	33	0	0	0	33	17310	
2007	2072	12872	3119	0	18063	35	0	0	0	35	18028	
2008	1915	13413	3356	0	18684	36	0	0	0	36	18648	
2009	0	13976	9519	0	23495	37	1957	0	0	1994	21501	
2010	0	14563	12948	0	27511	39	4752	0	0	4791	22720	
2011	0	15175	15133	0	30308	40	5530	0	0	5570	24738	
2012	0	15812	11202	0	27014	2648	2922	0	0	5571	21443	
2013	0	16476	10504	0	26980	4278	2236	0	0	6514	20466	
2014	0	17168	13229	0	30397	5995	4316	0	0	10311	20086	
2015	0	17889	12762	0	30651	7787	3027	0	0	10814	19837	
2016	0	18640	13533	0	32173	9656	4473	0	0	14129	18044	
2017	0	19423	12801	0	32224	10151	2867	0	0	13018	19206	
2018	0	20239	14588	0	34827	10640	4378	0	0	15018	19809	
2019	0	21089	14444	0	35533	11115	3879	0	0	14964	20539	
2020	0	21975	16400	0	38375	11593	5545	0	0	17138	21237	
2021	0	22898	15934	0	38832	937	3991	0	0	4928	33904	
2022	0	23860	17470	0	41330	840	7119	0	0	8058	33271	
2023	0	24862	16540	0	41402	954	4731	0	0	5685	35717	
2024	0	25908	18414	0	44320	958	6486	0	0	7442	36878	
2025	0	26994	17938	0	44932	966	5164	0	0	8130	36902	
NOMINAL	17090	426034	264034	0	707158	135005	75292	0	5310	215607	491551	
NPV	8249	95462	49510	0	153221	45419	13070	0	3250	61739	91483	

UTILITY DISCOUNT RATE: 8.67%
BENEFIT/COST RATIO (COL. 5/COL. 11): 2.48

**Petition of Florida Power Corporation For
Approval of Revised Program Participation Standards**

ATTACHMENT H

**COST-EFFECTIVENESS TESTS FOR THE
RESIDENTIAL NEW CONSTRUCTION PROGRAM
WITH REVISED PARTICIPATION STANDARDS**

PROGRAM: RESIDENTIAL NEW CONSTRUCTION

RATE IMPACT MEASURE TEST

YEAR	BENEFITS					COSTS							NET BENEFITS TO ALL CUSTOMERS \$1000
	(1) FUEL & O & M SAVINGS \$1000	(2) AVOIDED T&D CAP. COSTS \$1000	(3) AVOIDED GEN. CAP. COSTS \$1000	(4) REVENUE GAINS \$1000	(5) TOTAL BENEFITS \$1000	(6) FUEL & O & M INCREASE \$1000	(7) INCREASED T&D CAP. COSTS \$1000	(8) INCREASED GEN. CAP. COSTS \$1000	(9) UTILITY PROGRAM COSTS \$1000	(10) INCENTIVE PAYMENTS \$1000	(11) REVENUE LOSSES \$1000	(12) TOTAL COSTS \$1000	
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	10	0	0	0	10	0	0	0	488	64	25	587	-577
1998	43	0	0	0	43	0	38	0	303	186	98	625	-582
1999	160	265	0	0	425	0	0	0	318	368	421	1107	-882
2000	268	542	0	0	810	0	0	0	335	628	818	1781	-971
2001	0	835	727	0	1562	84	0	0	347	634	1282	2347	-785
2002	0	1145	1141	0	2286	242	0	0	359	642	1728	2971	-685
2003	0	1474	1172	0	2646	23	0	0	655	2189	3239	3791	-693
2004	0	1826	1675	0	3501	72	0	0	386	2963	3791	4288	-290
2005	0	2203	1915	0	4118	53	0	0	400	3143	4288	4288	-171
2006	0	2296	2006	0	4302	75	0	0	0	3259	3334	3334	968
2007	7	2392	2007	0	4406	0	0	0	0	3349	3349	3349	1057
2008	178	2493	1665	0	4336	0	0	0	0	3442	3442	3442	894
2009	294	2597	1705	0	4586	0	0	0	0	3538	3538	3538	1058
2010	0	2707	2264	0	4971	106	0	0	0	3636	3742	4229	1229
2011	232	2820	1872	0	5024	0	0	0	0	3737	3737	3737	1287
2012	725	2939	1188	0	4852	0	0	0	0	3823	3823	3823	1029
2013	917	3062	993	0	4972	0	0	0	0	3929	3929	3929	1043
2014	79	3191	2303	0	5573	0	0	0	0	4057	4057	4057	1516
2015	241	3325	2303	0	5869	0	0	0	0	4169	4169	4169	1700
2016	0	3464	2553	0	6017	49	0	0	0	4285	4334	4334	1683
2017	696	3610	1628	0	5934	0	0	0	0	4361	4361	4361	1673
2018	26	3781	2726	0	6513	0	0	0	0	4526	4526	4526	1987
2019	119	3918	2730	0	6769	96	0	0	0	4650	4650	4650	2118
2020	0	4084	2994	0	7078	0	0	0	0	4765	4881	4881	2217
2021	202	4256	2900	0	7356	0	0	0	0	4912	4912	4912	2446
2022	103	4434	2693	0	7230	0	0	0	0	5036	5036	5036	2194
2023	54	4621	3155	0	7830	0	0	0	0	5188	5188	5188	2642
2024	0	4815	3209	0	8024	31	0	0	0	5333	5364	5364	2690
2025	69	5017	3255	0	8341	0	0	0	0	5441	5441	5441	2900
NOMINAL	4423	78083	52879	0	135395	831	48	0	3308	4540	97803	106530	28865
NPV	1170	16985	11882	0	30037	339	38	0	2058	2577	22596	27608	2429

UTILITY DISCOUNT RATE: 8.67%
BENEFIT/COST RATIO (COL. 5/COL. 12): 1.09

PROGRAM: RESIDENTIAL NEW CONSTRUCTION

TOTAL RESOURCE COST TEST

YEAR	BENEFITS					COSTS							NET BENEFITS \$(000)
	(1) TOTAL SAVINGS \$(000)	(2) AVOIDED T&D CAP. COSTS \$(000)	(3) AVOIDED GEN. CAP. COSTS \$(000)	(4) OTHER PARTICIPANT BENEFITS \$(000)	(5) TOTAL BENEFITS \$(000)	(6) PARTICIPANT COSTS \$(000)	(7) TOTAL FUEL & O&M INCREASE \$(000)	(8) INCREASED T&D CAP. COSTS \$(000)	(9) INCREASED GEN. CAP. COSTS \$(000)	(10) UTILITY PROGRAM COSTS \$(000)	(11) TOTAL COSTS \$(000)	(12)	
1995	0	0	0	0	0	0	0	0	0	0	0	0	
1996	0	0	0	0	0	0	0	0	0	0	0	0	
1997	0	0	0	0	10	346	0	10	0	488	844	-834	
1998	43	0	0	0	43	1008	0	38	0	303	1347	-1304	
1999	160	265	0	0	425	1989	0	0	0	318	2307	-1882	
2000	268	542	0	0	810	3393	0	0	0	335	3728	-2818	
2001	0	835	727	0	1562	3425	84	0	0	347	3856	-2294	
2002	0	1145	1141	0	2286	3472	242	0	0	359	4073	-1787	
2003	0	1474	1172	0	2646	3541	23	0	0	372	3836	-1290	
2004	0	1826	1675	0	3501	3623	72	0	0	386	4081	-580	
2005	0	2203	1915	0	4118	3750	53	0	0	400	4203	-85	
2006	0	2296	2006	0	4302	11	75	0	0	0	86	4216	
2007	7	2392	2007	0	4406	11	0	0	0	0	11	4395	
2008	178	2493	1665	0	4336	12	0	0	0	0	12	4324	
2009	284	2597	1705	0	4598	12	0	0	0	0	12	4584	
2010	0	2707	2264	0	4971	12	106	0	0	0	118	4853	
2011	232	2820	1972	0	5024	13	0	0	0	0	13	5011	
2012	725	2939	1188	0	4852	428	0	0	0	428	4424	428	
2013	917	3062	893	0	4972	1219	0	0	0	0	1219	3753	
2014	79	3191	2303	0	5573	2398	0	0	0	0	2396	3177	
2015	241	3325	2303	0	5889	4077	0	0	0	0	4077	1792	
2016	0	3464	2553	0	6017	4115	49	0	0	0	4164	1853	
2017	696	3610	1628	0	5934	4170	0	0	0	0	4170	1764	
2018	26	3761	2726	0	6513	4251	0	0	0	0	4251	2262	
2019	119	3919	2730	0	6768	4350	0	0	0	0	4350	2418	
2020	0	4084	2984	0	7078	4499	96	0	0	0	4595	2483	
2021	202	4256	2900	0	7358	18	0	0	0	0	18	7340	
2022	103	4434	2693	0	7230	19	0	0	0	0	19	7211	
2023	54	4621	3155	0	7830	20	0	0	0	0	20	7810	
2024	0	4815	3209	0	8024	21	31	0	0	0	52	7972	
2025	69	5017	3255	0	8341	21	0	0	0	0	21	8320	
NOMINAL	4423	78083	52879	0	135395	54220	831	48	0	3308	58407	76983	
NPV	1170	16985	11982	0	30037	18775	339	38	0	2058	21210	8827	

UTILITY DISCOUNT RATE: 8.07%
BENEFIT/COST RATIO (COL. 5/COL. 11): 1.42

PROGRAM: RESIDENTIAL NEW CONSTRUCTION

PARTICIPANT TEST

YEAR	BENEFITS				COSTS			NET BENEFITS TO PARTICIPANTS \$1000
	(1) SAVINGS IN PARTICIPANT'S BILL \$1000	(2) INCENTIVE PAYMENTS \$1000	(3) OTHER PARTICIPANT BENEFITS \$1000	(4) TOTAL BENEFITS \$1000	(5) PARTICIPANT COSTS \$1000	(6) PARTICIPANT'S BILL INCREASE \$1000	(7) TOTAL COSTS \$1000	
1995	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0
1997	25	64	0	89	346	0	346	-257
1998	98	186	0	284	1008	0	1008	-722
1999	421	368	0	789	1989	0	1989	-1200
2000	818	628	0	1446	3393	0	3393	-1947
2001	1282	634	0	1916	3425	0	3425	-1509
2002	1728	642	0	2370	3472	0	3472	-1102
2003	2189	655	0	2844	3541	0	3541	-697
2004	2663	670	0	3333	3623	0	3623	-290
2005	3143	693	0	3836	3750	0	3750	86
2006	3259	0	0	3259	11	0	11	3248
2007	3349	0	0	3349	11	0	11	3338
2008	3442	0	0	3442	12	0	12	3430
2009	3538	0	0	3538	12	0	12	3526
2010	3636	0	0	3636	12	0	12	3624
2011	3737	0	0	3737	13	0	13	3724
2012	3823	0	0	3823	428	0	428	3395
2013	3929	0	0	3929	1219	0	1219	2710
2014	4057	0	0	4057	2396	0	2396	1661
2015	4169	0	0	4169	4077	0	4077	92
2016	4285	0	0	4285	4115	0	4115	170
2017	4361	0	0	4361	4170	0	4170	191
2018	4526	0	0	4526	4251	0	4251	275
2019	4650	0	0	4650	4350	0	4350	300
2020	4765	0	0	4765	4499	0	4499	266
2021	4912	0	0	4912	18	0	18	4894
2022	5036	0	0	5036	19	0	19	5017
2023	5188	0	0	5188	20	0	20	5168
2024	5333	0	0	5333	21	0	21	5312
2025	5441	0	0	5441	21	0	21	5420
NOMINAL	97803	4540	0	102343	54220	0	54220	48123
NPV	22596	2577	0	25173	18775	0	18775	6398

UTILITY DISCOUNT RATE: 8.67%
 BENEFIT/COST RATIO (COL. 4/COL. 7): 1.34