



**Florida
Power**
CORPORATION

JAMES A. MCGEE
SENIOR COUNSEL

March 28, 1997

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

Re: Docket No. **970056-EG**

Dear Ms. Bayó:

Enclosed for filing in the subject docket are an original and fifteen copies each of Florida Power Corporation's Motion for Leave to File Amended Petition and its Amended Petition.

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 documents in WordPerfect format. Thank you for your assistance in this matter.

Very truly yours,

James A. McGee

JAM/kp
Enclosure

cc: Lorna Wagner, Esquire
Ms. Judy Harlow

RECEIVED & FILED

EPSC-BUREAU OF RECORDS

Motion *petition*
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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. 970056-EG

Submitted for filing:
March 28, 1997AMENDED PETITION

Florida Power Corporation ("Florida Power") hereby amends its petition initiating this docket, which requested approval of certain enumerated revisions to the program participation standards of Florida Power's Residential Home Energy Improvement and Residential New Construction Programs. By this amended petition Florida Power seeks approval of additional revisions to its program participation standards in two areas, namely, an expansion of the Residential Home Energy Improvement Program's duct leakage repair component to include multi-family rental units, and several "housekeeping" revisions suggested by Staff to clarify two provisions each in the program participation standards for the Residential Home Energy Improvement Program and the Residential New Construction Program. In all other respects the revisions in Florida Power's original petition remain unchanged.

Duct Leakage Repair Revisions

1. Florida Power's existing program participation standards for its Residential Home Energy Improvement Program exclude multi-family dwellings

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from the duct repair component because of perceived health and safety concerns associated with the repair activities. Recently available information indicates that these concerns can be overcome by proper precautionary measures. Therefore, Florida Power desires to expand its duct repair program to include these kinds of multi-family units.

2. To accomplish this, Florida Power has deleted the multi-family exclusion language in item 5 of Section 7.1, *Participation Requirements*, and has added a new line to Section 3, *Incentives*, applicable to rental units which provides for a payment to participants for the "actual cost of repair not to exceed \$100.00 to seal multi-family rental units." The reason that a cost-sharing incentive has not been utilized is that Florida Power's experience has shown that owners of rental units are unwilling to contribute to the costs of improvements that benefit only the tenants, and that the tenants, typically short-term occupants, are similarly unwilling to pay for long-term improvements. Conforming revisions have also been made to item 2 of Section 7.1 and item 5 of Section 7.3, *Contractor Requirements*.

Clarifying Revisions

3. After discussions with Staff, Florida Power has made clarifying revisions to the Residential Home Energy Improvement Program participation standards in item 7 of Section 8.2, *Equipment and Installation Specifications*, regarding the High Efficiency Electric Heat Pumps program component, and to item 3 of Section 9.3, *Contractor Requirements*, regarding the High Efficiency Alternate Electric Water Heating program component. Similar revisions have also been made to the Residential New Construction Program participation standards in item

2 of Section 2.1, *Equipment and Installation Specifications*, and to footnote 2 in Section 3.2 regarding Technical Specifications on Equipment Eligibility.

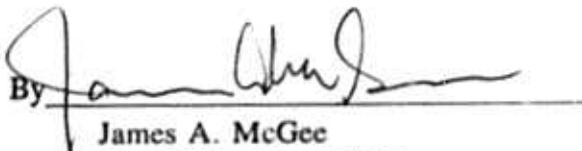
Attachments

4. Revised program participation standards for the Residential Home Energy Improvement Program and the Residential New Construction Program, including the additional revisions described above, are contained in Revised Attachments A and B, respectively. Revised Attachments C and D show the revisions in legislative format. Revised Attachment G contains RIM, Participant and TRC cost-effectiveness tests for the Residential Home Energy Improvement Program with its revised participation standards, which demonstrated that the program is not materially affected by the revisions and remains 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 

James A. McGee
Post Office Box 14042
St. Petersburg, FL 33733-4042
Telephone: (813) 866-5184
Facsimile: (813) 866-4931

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

**REVISED
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 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
Multi-Family Duct Leakage Repair	Actual cost of repair not to exceed \$100.00 to seal multi-family rental units
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.
Exception: Multi-family rental units do not require 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. 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.
6. 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."
 5. In multi-family rental units the contractor shall seal all joints and connections

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 HVAC equipment installed should approximate one ton per 500 square feet of conditioned area. Florida Power will require a Manual J calculation if exceeded by more than an approximate one ton per 500 square feet of conditioned area. Manufactured housing is exempt from this rule.
8. The contractor will certify that the unit was sized according to manufacturers specifications.
9. Refrigerant charge and type shall be according to manufacturer's specifications and recommendations for the unit installed. The contractor will certify that the proper charge is installed, that the unit is tested and is leak free.

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.

10. Contractors shall certify that the air flow meets the manufacturer's recommendations and specifications for the system installed.
11. Contractors shall certify that if the equipment installed has a scroll compressor (36,001 BTUh or larger), that a hard start kit was installed either by the contractor or at the factory.
12. Return air filters shall be installed to meet manufacturer's specifications with no obstructions. Filters must be easily accessible and the location shown to the customer.
13. The contractor shall check that the controlling thermostat is properly leveled, that the anticipator is properly set, and the thermometer is correct to within two degrees Fahrenheit.
14. The contractor will be encouraged to use mastic on all new connections.
15. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
16. Heat pump must be all electric.
17. 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 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**

**REVISED
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. FPC requires that equipment upgrades contained in Level 2 standards must result in a commensurate reduction in the EPI requirements before awarding an incentive.
3. 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. Minimum wall insulation is R-4 for masonry and R-11 for frame.
5. Equipment information such as model numbers, manufacturers, and Btuh capacity shall be made accessible to the FPC representative.
6. All materials used to seal duct systems must be approved by FPC.
7. 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. 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. 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.

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.

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.

3. Install a heat recovery unit.
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**

**REVISED
ATTACHMENT C**

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

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 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
Multi-Family Duct Leakage Repair	Actual cost of repair not to exceed \$100.00 to seal multi-family rental units
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. Exception: Multi-family rental units do not require 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."
5. In multi-family rental units the contractor shall seal all joints and connections.

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. The HVAC equipment installed should approximate one ton per 500 square feet of conditioned area. Florida Power will require a Manual J calculation if exceeded by more than an approximate one ton per 500 square feet of conditioned area. Manufactured housing is exempt from this rule.~~

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. ~~Cooling unit sizing may not exceed the calculated whole house load by 15% or 6,000 BTUh, whichever is larger.⁴ The contractor will certify that the unit was sized according to manufacturers specifications.~~
9. Refrigerant charge and type shall be according to manufacturer's specifications and recommendations for the unit installed. The contractor will certify that the proper charge is installed, that the unit is tested and is leak free.
10. Contractors shall certify that the air flow meets the manufacturer's recommendations and specifications for the system installed.
11. Contractors shall certify that if the equipment installed has a scroll compressor (36,000 BTUh or larger), that a hard start kit was installed either by the contractor or at the factory.
12. Return air filters shall be installed to meet manufacturer's specifications with no obstructions. Filters must be easily accessible and the location shown to the customer.
13. The contractor shall check that the controlling thermostat is properly leveled, that the anticipator is properly set, and the thermometer is correct to within two degrees Fahrenheit.
14. ~~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. Air handling units, mechanical closets and enclosed support platforms shall be sealed from unconditioned air.
16. Heat pump must be all electric.
17. 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

⁴ 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**

**REVISED
ATTACHMENT D**

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

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. ~~Cooling unit sizing may not exceed the calculated whole house load by 15% or 6,000 Btuh, whichever is larger.~~ FPC requires that equipment upgrades contained in Level 2 standards must result in a commensurate reduction in the EPI requirements before awarding an incentive.
3. 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. Minimum wall insulation is R-4 for masonry and R-11 for frame.
5. Equipment information such as model numbers, manufacturers, and Btuh capacity shall be made accessible to the FPC representative.
6. All materials used to seal duct systems must be approved by FPC.
7. 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. 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. 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	3.4
		\$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)				

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**

**REVISED
ATTACHMENT G**

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

MEASURE or PROGRAM: Home Energy Improvement

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	671	1052	0	1723	2727	0	2727	-1004
1998	1500	1474	0	2974	3795	0	3795	-821
1999	2566	1946	0	4512	4916	0	4916	-404
2000	3748	2405	0	6154	6078	0	6078	75
2001	5164	2912	0	8076	7286	0	7286	790
2002	6581	2964	0	9545	7510	0	7510	2035
2003	8129	3073	0	11202	7735	0	7735	3467
2004	9359	3123	0	12482	7849	0	7849	4533
2005	11004	3239	0	14243	8171	0	8171	6072
2006	11301	0	0	11301	33	0	33	11268
2007	11614	0	0	11614	35	0	35	11579
2008	11945	0	0	11945	36	0	36	11909
2009	12279	0	0	12279	37	0	37	12242
2010	12669	0	0	12669	39	0	39	12830
2011	13013	0	0	13013	40	0	40	12973
2012	13367	0	0	13367	2649	0	2649	10718
2013	13690	0	0	13690	4278	0	4278	9412
2014	14071	0	0	14071	5995	0	5995	8076
2015	14478	0	0	14478	7787	0	7787	6691
2016	14860	0	0	14860	9656	0	9656	5204
2017	15303	0	0	15303	10151	0	10151	5152
2018	15744	0	0	15744	10640	0	10640	5104
2019	16170	0	0	16170	11115	0	11115	5055
2020	16621	0	0	16621	11593	0	11593	5028
2021	17104	0	0	17104	937	0	937	16167
2022	17564	0	0	17564	940	0	940	16624
2023	18065	0	0	18065	954	0	954	17111
2024	18601	0	0	18601	956	0	956	17645
2025	19054	0	0	19054	966	0	966	18088
NOMINAL	346236	22188	0	368424	135005	0	135005	233419
NPV	82486	12914	0	95400	45419	0	45419	49981

UTILITY DISCOUNT RATE: 8.67%
 BENEFIT/COST RATIO (COL. 4/COL. 7): 2.10

MEASURE or PROGRAM: Home Energy Improvement

TOTAL RESOURCE COST TEST

YEAR	BENEFITS					COSTS					NET BENEFITS \$1000	
	(1) TOTAL 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	235	780	0	0	1015	2727	0	0	784	3521	-2506	
1998	548	1686	0	0	2214	3795	0	0	685	4480	-2266	
1999	943	2815	0	0	3758	4816	0	0	739	5655	-1897	
2000	644	4096	1581	0	6321	6079	0	0	754	6833	-512	
2001	0	5677	4869	0	10546	7286	2141	0	807	10234	312	
2002	2479	7209	0	0	9688	7510	0	0	787	8297	1391	
2003	1977	9020	1417	0	12414	7735	0	0	842	8577	3837	
2004	1782	10682	2384	0	14814	7849	0	0	823	8772	6042	
2005	1407	12708	3960	0	18073	8171	0	0	878	9050	9023	
2006	1302	13240	4087	0	18629	33	0	0	0	33	18596	
2007	1468	13796	4130	0	18384	35	0	0	0	35	18359	
2008	1293	14375	4288	0	19956	36	0	0	0	36	19920	
2009	1605	14979	4371	0	20955	37	0	0	0	37	20918	
2010	0	15608	13944	0	29552	39	5434	0	0	5473	24079	
2011	0	16264	16050	0	32314	40	6108	0	0	6148	26166	
2012	0	16947	12200	0	29147	2649	3502	0	0	6211	22936	
2013	0	17659	11411	0	29070	4278	2793	0	0	7071	21899	
2014	0	18400	12815	0	31215	5995	3946	0	0	8941	21274	
2015	0	19173	13758	0	32931	7787	3612	0	0	11389	21532	
2016	0	19978	14653	0	34631	9656	5349	0	0	15005	19026	
2017	0	20817	13878	0	34696	10151	3520	0	0	13871	21025	
2018	0	21692	15778	0	37470	10640	5151	0	0	16781	21679	
2019	0	22603	15590	0	38193	11115	4604	0	0	16719	22474	
2020	0	23552	17679	0	41231	11593	6406	0	0	17999	23232	
2021	0	24541	17128	0	41669	937	4700	0	0	5637	36032	
2022	0	25572	18828	0	44400	840	8142	0	0	9082	35318	
2023	0	26646	17833	0	44479	854	5688	0	0	6522	37657	
2024	0	27765	18832	0	47597	956	7466	0	0	8422	38175	
2025	0	28931	19294	0	48225	966	6025	0	0	6991	41234	
NOMINAL	15689	457169	281739	0	754597	135005	84527	0	7110	226642	527955	
NPV	7590	102665	53095	0	183351	45419	14266	0	4368	64053	99298	

UTILITY DISCOUNT RATE: 8.67%
BENEFIT/COST RATIO (COL. 5/COL. 11): 2.55

MEASURE or PROGRAM: Home Energy Improvement

RATE IMPACT MEASURE TEST

YEAR	BENEFITS					COSTS								NET BENEFITS TO ALL CUSTOMERS \$1000
	(11) FUEL & O & M SAVINGS \$1000	(12) AVOIDED T&D CAP. COSTS \$1000	(13) AVOIDED GEN. CAP. COSTS \$1000	(14) REVENUE GAINS \$1000	(5) TOTAL BENEFITS \$1000	(16) FUEL & O & M INCREASE \$1000	(17) INCREASED T&D CAP. COSTS \$1000	(18) INCREASED GEN. CAP. COSTS \$1000	(19) UTILITY PROGRAM COSTS \$1000	(10) INCENTIVE PAYMENTS \$1000	(11) REVENUE LOSSES \$1000	(12) TOTAL COSTS \$1000	(13) NET BENEFITS TO ALL CUSTOMERS \$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	235	780	0	0	1015	0	0	0	794	1052	671	2517	1502	
1998	548	1666	0	0	2214	0	0	0	685	1474	1500	3659	1445	
1999	843	2815	0	0	3758	0	0	0	739	1946	2566	5251	1493	
2000	644	4096	1581	0	6321	0	0	0	754	2405	3749	6908	587	
2001	0	5677	4889	0	10546	2141	0	0	907	2912	5164	11024	478	
2002	2479	7209	0	0	9688	0	0	0	787	2964	8581	10332	644	
2003	1977	9020	1417	0	12414	0	0	0	842	3073	8129	12044	370	
2004	1788	10662	2364	0	14814	0	0	0	823	3123	9359	13305	1509	
2005	1407	12706	3960	0	18073	0	0	0	879	3228	11004	15122	2951	
2006	1302	13240	4087	0	18629	0	0	0	0	0	11301	11301	7328	
2007	1468	13796	4130	0	19394	0	0	0	0	0	11814	11814	7780	
2008	1293	14375	4288	0	19956	0	0	0	0	0	11845	11845	8011	
2009	1805	14979	4371	0	20955	0	0	0	0	0	12279	12279	8676	
2010	0	15608	13944	0	29552	5434	0	0	0	0	12668	18103	11448	
2011	0	16264	16050	0	32314	6108	0	0	0	0	13013	19121	13193	
2012	0	16947	12200	0	29147	3562	0	0	0	0	13387	16928	12218	
2013	0	17659	11411	0	29070	2793	0	0	0	0	13690	16483	12587	
2014	0	18400	12815	0	31215	3946	0	0	0	0	14071	18017	13198	
2015	0	19173	13758	0	32931	3812	0	0	0	0	14478	18090	14841	
2016	0	19978	14653	0	34631	5349	0	0	0	0	14860	20209	14422	
2017	0	20817	13879	0	34696	3520	0	0	0	0	15303	18223	15872	
2018	0	21692	15778	0	37470	5181	0	0	0	0	15744	20895	16575	
2019	0	22603	15590	0	38193	4604	0	0	0	0	16170	20774	17419	
2020	0	23552	17679	0	41231	6406	0	0	0	0	16221	23027	18204	
2021	0	24541	17128	0	41669	4700	0	0	0	0	17104	21804	18885	
2022	0	25572	18228	0	44400	8142	0	0	0	0	17564	25706	18094	
2023	0	26646	17833	0	44479	5568	0	0	0	0	18085	23633	20846	
2024	0	27765	18832	0	47587	7466	0	0	0	0	18601	25067	21530	
2025	0	28931	19294	0	48225	6025	0	0	0	0	19054	25079	23146	
NOMINAL	15689	457169	281739	0	754597	84527	0	0	7110	22188	346236	460081	284538	
NPV	7590	102665	53095	0	163351	14266	0	0	4368	12914	82486	114034	49316	

UTILITY DISCOUNT RATE: 8.87%
 BENEFIT/COST RATIO (COL. 5/COL. 12): 1.43