

FLORIDA PUBLIC SERVICE COMMISSION  
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M E M O R A N D U M

December 23, 1997

TO: DIRECTOR, DIVISION OF RECORDS AND REPORTING (BAYO)

FROM: DIVISION OF ELECTRIC AND GAS (COLSON) *RC DM 23*  
DIVISION OF LEGAL SERVICES (KEATING) *RET RVE*

RE: DOCKET NO. 971602-EU - APPROVAL OF SURVEY INSTRUMENT  
USED TO COLLECT RESIDENTIAL END-USE DATA.

AGENDA: JANUARY 6, 1998 - REGULAR AGENDA - PROPOSED AGENCY  
ACTION - INTERESTED PERSON MAY PARTICIPATE

CRITICAL DATES: DECISION REQUIRED BY JANUARY 15, 1998, TO COMPLY  
WITH COMMISSION RULE 25-17.006, FAC.

SPECIAL INSTRUCTIONS: S:\PSC\EAG\WP\971602EU.RCM

CASE BACKGROUND

Rule 25-17.006 (3), Florida Administrative Code, specifies that an end-use survey of residential customers will be performed every four years by all utilities subject to the Florida Energy Efficiency and Conservation Act (FEECA). Currently this Rule is in the process of being revised and is expected to be approved before the 1998 survey data is filed. Past surveys were done using a survey instrument and a Rule substantially similar to the ones proposed for 1998. In December 1994, FEECA was revised whereby the number of utilities that performed the surveys were reduced from twelve down to six. The utilities participating in the 1998 survey are:

Investor-Owned Electric Utilities: Florida Power Corporation (FPC), Florida Power and Light Company (FPL), Gulf Power Company (GPC), Tampa Electric Company (TECO).

Municipal Electric Utilities: Jacksonville Electric Authority (JEA), Orlando Utility Commission (OUC).

Regardless of the outcome of the Rule Revision, staff is required to develop and issue a survey instrument to be used to collect information on appliance stock, customer demographics, and housing characteristics. The survey will include a representative sample of residential customers.

DOCUMENT NUMBER-DATE

13136 DEC 23 97

FPSC-RECORDS/REPORTING

## DISCUSSION OF ISSUES

ISSUE 1: Should the Commission approve the survey instrument revised by staff for collecting residential end-use data in 1998?

RECOMMENDATION: Yes.

STAFF ANALYSIS: The proposed survey instrument in Attachment A will enable staff to analyze information on energy consumption trends, appliance stock, and demographics. This survey instrument is nearly identical to the one used in the 1994 survey. The only changes are the inclusion of questions requesting the approximate ages of the refrigerator and freezer.

The information that will be collected in the 1998 survey can be compared to similar data gathered in past surveys performed in 1986, 1990, and 1994. Such previous information has been useful in a variety of ways. The Department of Community Affairs (DCA) has used data from the 1990 survey in its evaluation of residential building codes. Synergic Resources Corporation (SRC) used data from the 1990 survey as a starting point for its study of conservation potential in Florida. Data collected from the 1998 survey is anticipated to be used in new studies of conservation potential in Florida.

ISSUE 2: Should this docket be closed?

RECOMMENDATION: Yes.

STAFF ANALYSIS: If no substantially affected person files a timely protest within 21 days, no further action will be required and this docket should be closed.

**CODING FORMAT FOR THE 1998 RESIDENTIAL CUSTOMER SURVEY**

A. Survey Identification Number (5 digits):

B. Utility Identification

- 01 Florida Power Corporation
- 02 Tampa Electric Company
- 03 Gulf Power company
- 04 Jacksonville Electric Authority
- 05 Florida Power and Light
- 06 Orlando Utilities Commission

C. County Identification:

- |                     |                        |                      |
|---------------------|------------------------|----------------------|
| <u>01</u> Alachua   | <u>23</u> Gulf         | <u>45</u> Nassau     |
| <u>02</u> Baker     | <u>24</u> Hamilton     | <u>46</u> Okaloosa   |
| <u>03</u> Bay       | <u>25</u> Hardee       | <u>47</u> Okeechobee |
| <u>04</u> Bradford  | <u>26</u> Hendry       | <u>48</u> Orange     |
| <u>05</u> Brevard   | <u>27</u> Hernando     | <u>49</u> Osceola    |
| <u>06</u> Broward   | <u>28</u> Highlands    | <u>50</u> Palm Beach |
| <u>07</u> Calhoun   | <u>29</u> Hillsborough | <u>51</u> Pasco      |
| <u>08</u> Charlotte | <u>30</u> Holmes       | <u>52</u> Pinellas   |
| <u>09</u> Citrus    | <u>31</u> Indian River | <u>53</u> Polk       |
| <u>10</u> Clay      | <u>32</u> Jackson      | <u>54</u> Putnam     |
| <u>11</u> Collier   | <u>33</u> Jefferson    | <u>55</u> St. Johns  |
| <u>12</u> Columbia  | <u>34</u> Lafayette    | <u>56</u> St. Lucie  |
| <u>13</u> Dade      | <u>35</u> Lake         | <u>57</u> Santa Rosa |
| <u>14</u> De Soto   | <u>36</u> Lee          | <u>58</u> Sarasota   |
| <u>15</u> Dixie     | <u>37</u> Leon         | <u>59</u> Seminole   |
| <u>16</u> Duval     | <u>38</u> Levy         | <u>60</u> Sumter     |
| <u>17</u> Escambia  | <u>39</u> Liberty      | <u>61</u> Suwanee    |
| <u>18</u> Flagler   | <u>40</u> Madison      | <u>62</u> Taylor     |
| <u>19</u> Franklin  | <u>41</u> Manatee      | <u>63</u> Union      |
| <u>20</u> Gadsden   | <u>42</u> Marion       | <u>64</u> Volusia    |
| <u>21</u> Gilchrist | <u>43</u> Martin       | <u>65</u> Wakulla    |
| <u>22</u> Glades    | <u>44</u> Monroe       | <u>66</u> Walton     |
|                     |                        | <u>67</u> Washington |

D. Billing History (Oldest month first):

Example

a.	1st month beginning billing date	Month/day/yr	04 / 10 / 93
b.	1st month ending billing date	Month/day/yr	05 / 07 / 93
c.	1st month's KWH consumption		01872
d.	2nd month ending billing date	Month/day/yr	__ / __ / __
e.	2nd month's KWH consumption		-----
f.	3rd month ending billing date	Month/day/yr	__ / __ / __
g.	3rd month's KWH consumption		-----
h.	4th month ending billing date	Month/day/yr	__ / __ / __
i.	4th month's KWH consumption		-----
j.	5th month ending billing date	Month/day/yr	__ / __ / __
k.	5th month's KWH consumption		-----
l.	6th month ending billing date	Month/day/yr	__ / __ / __
m.	6th month's KWH consumption		-----
n.	7th month ending billing date	Month/day/yr	__ / __ / __
o.	7th month's KWH consumption		-----
p.	8th month ending billing date	Month/day/yr	__ / __ / __
q.	8th month's KWH consumption		-----
r.	9th month ending billing date	Month/day/yr	__ / __ / __
s.	9th month's KWH consumption		-----
t.	10th month ending billing date	Month/day/yr	__ / __ / __
u.	10th month's KWH consumption		-----
v.	11th month ending billing date	Month/day/yr	__ / __ / __
w.	11th month's KWH consumption		-----
x.	12th month ending billing date	Month/day/yr	__ / __ / __
y.	12th month's KWH consumption		-----

E. Date survey was performed: Month/day/yr \_\_ / \_\_ / \_\_

F. Time survey was performed Hour \_\_\_\_\_  
(Military Time)

ON-SITE VISIT

[INTRODUCTION - Each utility will customize as needed.]

1. About how many years have you lived here? (ROUND UP) (TAKE MIDPOINT OF RANGE) (OFFER REFERENCE IF NECESSARY BASED ON PERCEIVED AGE OF RESPONDENT - FOR EXAMPLE "Have you lived here more than five years?" CHANGE BY 5 YEAR INCREMENTS) (DK=99)

\_\_ \_\_ Years

2. About what year was your residence built? (ROUND UP) (TAKE MIDPOINT OF RANGE) (IF NECESSARY OFFER A REFERENCE POINT BASED ON YOUR ESTIMATE OF THE AGE - FOR EXAMPLE "Do you think it was built before or after 1980?" CHANGE BY 5 YEAR INCREMENTS) (PROVIDE ESTIMATE IF NECESSARY)

1 \_\_ \_\_ \_\_ Year Built

(CODE 0 IF CUSTOMER PROVIDED RESPONSE, CODE 1 IF INTERVIEWER ESTIMATED)

0 Customer provided response  
1 Interviewer estimated

3. (FOR MULTI-FAMILY DWELLINGS ONLY; IF NOT MULTI-FAMILY DWELLING, CODE 8 AND CONTINUE WITH Q5) → Does your central air conditioner serve more than one residence?

1 Yes  
2 No  
8 Not a multi-family dwelling  
9 Don't know

4. During a typical summer weekday, at what temperature do you set your central air conditioner during the: (READ EACH) (OFF=00; DK=99) (TAKE MIDPOINT OF RANGE)

\_\_ \_\_ °F Day  
\_\_ \_\_ °F Night

**LET'S NOW TALK ABOUT YOUR HEATING SYSTEM**

5. What is the primary fuel used to heat your home? (BEGIN TO READ) (CODE ONLY ONE)

<u>01</u> Electricity	<u>07</u> Solar
<u>02</u> Natural Gas	<u>08</u> Kerosene
<u>03</u> Propane or bottled gas	<u>09</u> Other, _____
<u>04</u> Wood	<u>10</u> None (SKIP TO Q10)
<u>05</u> Oil	<u>99</u> Don't know
<u>06</u> Coal	

6. Do you have a backup or supplemental fuel that you use to heat your home? What is it? (CODE ONLY ONE)

<u>01</u> Electricity	<u>07</u> Solar
<u>02</u> Natural Gas	<u>08</u> Kerosene
<u>03</u> Propane or bottled gas	<u>09</u> Other, _____
<u>04</u> Wood	<u>10</u> None (SKIP TO Q10)
<u>05</u> Oil	<u>99</u> Don't know (SKIP TO Q10)
<u>06</u> Coal	

7. Is there any other fuel you use to heat your home? (CODE ONLY ONE)

<u>01</u> Electricity	<u>07</u> Solar
<u>02</u> Natural Gas	<u>08</u> Kerosene
<u>03</u> Propane or bottled gas	<u>09</u> Other, _____
<u>04</u> Wood	<u>10</u> None
<u>05</u> Oil	<u>99</u> Don't know
<u>06</u> Coal	

8. (FOR MULTI-FAMILY DWELLINGS ONLY; IF NOT MULTI-FAMILY DWELLING, CODE 8 AND CONTINUE WITH Q10) → Does your heating system serve more than one residence?

<u>1</u> Yes
<u>2</u> No
<u>8</u> Not a multi-family dwelling
<u>9</u> Don't know

9. During a typical winter weekday, at what temperature do you set your heating system during the (READ EACH) (OFF=00; NOT APPLICABLE/NO THERMOSTAT=01; DK=99) (TAKE MIDPOINT OF RANGE)

\_\_\_ °F Day  
\_\_\_ °F Night

**NEXT, WE'RE GOING TO TALK ABOUT YOUR APPLIANCES.**

10. Please tell me how many (READ EACH) you have at your residence. (NONE=0; 8 OR MORE=8; DK=9)

- \_\_\_ Electric wall oven
- \_\_\_ Gas wall oven
- \_\_\_ Electric cooktop
- \_\_\_ Gas cooktop
- \_\_\_ Electric ranges
- \_\_\_ Gas ranges
- \_\_\_ Microwave ovens
- \_\_\_ Convection or toaster ovens
- \_\_\_ Dishwashers
- \_\_\_ Auto defrost refrigerators
- \_\_\_ Manual defrost refrigerators
- \_\_\_ Stand alone auto defrost freezers (separate from refrigerator)
- \_\_\_ Stand alone manual defrost freezers (separate from refrigerator)
- \_\_\_ Washing machines
- \_\_\_ Electric clothes dryers
- \_\_\_ Gas clothes dryers
- \_\_\_ Color TVs
- \_\_\_ Black and white TVs
- \_\_\_ VCRs
- \_\_\_ Home computers
- \_\_\_ Ceiling fans
- \_\_\_ Portable electric space heaters
- \_\_\_ Water beds with electric heater
- \_\_\_ Water well pumps
- \_\_\_ Electrically heated hot tub or sauna (not oversized bathroom tub with jets)
- \_\_\_ Dehumidifier
- \_\_\_ Irrigation or sprinkler pump
- \_\_\_ Swimming pool pumps
- \_\_\_ Swimming pool pump timers
- \_\_\_ Electric swimming pool heaters
- \_\_\_ Solar swimming pool heaters

11.1 How old is the newest frost free refrigerator/freezer? (CODE 99 IF DON'T KNOW; CODE NUMBER OF YEARS WITH 00 FOR LESS THAN 1 YEAR OLD.)

\_\_ \_\_ Years Old

11.2 How old is the newest frost free stand alone freezer? (CODE 99 IF DON'T KNOW; CODE NUMBER OF YEARS WITH 00 FOR LESS THAN 1 YEAR OLD.)

\_\_ \_\_ Years Old

12. Is natural gas available on your street?

- 1 Yes
- 2 No
- 9 Don't know

13. Do you own or rent your residence?

- 1 Own/purchasing
- 2 Rent
- 3 Other

14. If you pay common charges, maintenance fees, or rent on your residence, do they include the energy costs of running your: (READ EACH) (CODE 1 IF INCLUDED, CODE 0 IF NOT INCLUDED, CODE 7 IF SYSTEM NOT PRESENT, CODE 8 IF COMMON CHARGES NOT PAID, CODE 9 IF DON'T KNOW)

- \_\_\_\_\_ Air conditioning system
- \_\_\_\_\_ Heating system
- \_\_\_\_\_ Hot water system



15. Beginning with the respondent, please tell me the members of the households' sex, age, employment status and education. (SLASH THROUGH UNUSED LINES)

Person	Sex (1) male (2) female (9) no response	Age (00) less than six months old (98) 98 years or older (99) no response	Employment (1) full-time (2) part-time (3) not employed (4) retired (9) no response	Education (1) grade 11 or lower (2) high school graduate (3) some college (4) college graduate (5) graduate school (9) no response
1 (Respondent)				
2				
3				
4				
5				
6				
7				
8				

16. What months do you live in this residence? (ABSENT = 0; PRESENT = 1)

0/1 January  
0/1 February  
0/1 March  
0/1 April  
0/1 May  
0/1 June

0/1 July  
0/1 August  
0/1 September  
0/1 October  
0/1 November  
0/1 December

17. And finally, which letter in this list represents the total annual 1997 income for your household before taxes? (SHOW CARD) (CODE LETTER FROM CARD)

\_\_\_\_\_

**1998 RESIDENTIAL CUSTOMER SURVEY**  
**SALARY KEY FOR QUESTION 17**

<u>CATEGORY</u>	<u>TOTAL INCOME</u>
Q	Less than \$5,000
D	\$5,000 to \$9,999
R	\$10,000 to \$14,999
M	\$15,000 to \$19,999
F	\$20,000 to \$24,999
S	\$25,000 to \$29,999
K	\$30,000 to \$34,999
G	\$35,000 to \$39,999
A	\$40,000 to \$44,999
B	\$45,000 to \$49,999
L	\$50,000 to \$54,999
O	\$55,000 to \$59,999
C	\$60,000 to \$64,999
N	\$65,000 to \$69,999
I	\$70,000 to \$74,999
H	\$75,000 to \$79,999
J	\$80,000 to \$99,999
E	\$100,000 and over
P	No response

Thank you. That conducts this part of the survey. I need to verify some information about your heating and cooling systems and your water heater. Will you please tell me where these are located?

18. CENTRAL AIR CONDITIONER

18a. Are there any central air conditioning systems present?

- 1 Yes  
2 No (SKIP TO Q19)

18b. Does the central air conditioning system serve more than one household?

- 1 Yes (SKIP TO Q19)  
2 No

18c. Matrix

Data Accuracy

- 1 Estimated  
2 Actual  
3 Unavailable (Make or Model # only)

Clock Controlled  
Thermostat

- 1 Yes  
2 No  
9 Don't know

Air Handler Location

- 1 Conditioned space  
2 Unconditioned space (includes garage)  
3 Unconditioned attic  
4 Outdoors  
9 Don't know

System Type

- 1 Central electric, straight cool/package  
2 Central electric, straight cool/split  
3 Central heat pump/air-packaged  
4 Central heat pump/air-split  
5 Central heat pump/water or ground source  
6 Central gas

Location of majority of duct work

- 1 Conditioned space  
2 Unconditioned space  
3 Unconditioned attic  
4 Outdoors  
5 No ducts

	Primary System	Data Accuracy	Supplemental System 1	Data Accuracy	Supplemental System 2	Data Accuracy
System Type						
BTUH						
Age of Compressor						
SEER						
Percent of living space cooled						
Clock controlled thermostat						
Location of duct						
Air handler						

19. WINDOW / WALL AC

19a. Is there at lease one window / wall air conditioning unit present?

- 1 Yes  
2 No (SKIP TO Q20)

19b. Matrix

Unit Type

- 1 AC only  
2 AC with heat pump  
3 AC with strip heat  
9 Don't know

Data Accuracy

- 1 Estimated  
2 Actual

	Unit 1	Data Accuracy	Unit 2	Data Accuracy	Unit 3	Data Accuracy
Unit Type						
BTUH						
EER						
Age of Compressor						
Percent of living space cooled						

20. HEATING SYSTEM

20a. Are there any heating systems present?

- 1 Yes  
2 No (SKIP TO Q21)

20b. Does the heating system serve more than one household?

- 1 Yes (SKIP TO Q21)  
2 No

## 20c. Matrix

### Data Accuracy

- 1 Estimated
- 2 Actual

### Fuel

- 1 Electricity
- 2 Natural gas
- 3 Propane or bottled gas
- 4 Wood
- 5 Oil
- 6 Coal
- 7 Solar
- 8 Kerosene
- 9 Other

### Air Handler Location

- 1 Conditioned space
- 2 Unconditioned space (includes garage)
- 3 Unconditioned attic
- 4 Outdoors
- 5 No air handler
- 9 Don't know

### Type System

- 1 Central furnace or boiler
- 2 Central heat pump - air
- 3 Central heat pump - water
- 4 Built-in electric room units with individual room controls (includes baseboards)
- 5 Room/wall AC with heat pump or strip
- 6 Permanent, non-electric room heaters
- 7 Whole house wall or floor furnace
- 8 Portable electric heater
- 9 Portable kerosene heater
- 10 Wood or coal burning stoves
- 11 Solar collectors
- 12 Fireplace

### Location of majority of duct work

- 1 Conditioned space
- 2 Unconditioned space
- 3 Unconditioned attic
- 4 Outdoors
- 5 No ducts

	Primary System	Data Accuracy	Supplemental System 1	Data Accuracy	Supplemental System 2	Data Accuracy
Type System						
Fuel						
Output capacity (BTUH, watts)						
Input capacity (BTUH, watts)						
Percent of living space heated						
Air handler location						
Duct work						
For heat pumps: COP						
HSPF						
Backup strip kw						
Age of compressor						

21. WATER HEATING SYSTEM

21a. Are there any domestic water heating systems present?

- 1 Yes  
2 No (SKIP TO Q22)

21b. Matrix

Fuel Type

- 1 Electric  
2 Natural gas  
3 LP gas  
4 Fuel oil  
5 Solar  
6 None  
9 Don't know

Insulation Type

- 1 External blanket  
2 Super insulated tank  
3 Standard insulated tank  
9 Don't know

Water Heating System	Unit 1	Unit 2	Unit 3
Primary fuel type			
Back-up fuel type			
Age in years			
Capacity in gallons			
Insulation type			
Location 1-Conditioned 2-Unconditioned			
Timer? 1-Yes 2-No			
Does unit serve more than one residence? 1-Yes 2-No			
Existing waste heat recovery? 1-Yes 2-No			
Waste heat recovery feasible? 1-Yes 2-No			
Dedicated heat pump? 1-Yes 2-No			

22. How many instantaneous (tankless) water heater(s) are present? (NONE=0; 8 OR MORE=8; DK=9)

\_\_\_\_\_ Instantaneous (tankless) water heaters

23. Interior square footage (NONE=00000) (EXCLUDING PATIO, PORCHES, UNFINISHED GARAGE)

\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Basement  
\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ First floor (level where you enter front door)  
\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Second floor  
\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ Third floor

24. Predominant type of floor construction:

- 1 Concrete slab
- 2 Crawl space enclosed and above ground
- 3 Crawl space open to the outside
- 4 Basement
- 9 Don't know

25. Predominant type of exterior construction:

- 1 Concrete block
- 2 Stucco over wood panel
- 3 Brick or brick veneer
- 4 Wood
- 5 Wood & brick/block combination
- 6 Aluminum
- 7 Vinyl
- 8 Other \_\_\_\_\_

26. Average wall insulation (R-VALUE): (NONE=00; DK=99)

\_\_\_ \_\_\_

27. Average attic insulation (R-VALUE): (NONE=00; COMMON CEILING=88; DK=99)

\_\_\_ \_\_\_

28. Dwelling type:

- 1 Single family detached
- 2 Multi-family (2-4 units)
- 3 Multi-family (5+ units, 1 story)
- 4 Multi-family (5+ units, 2+ stories)

- 5 Manufactured (mobile) home, single-wide
- 6 Manufactured (mobile) home, multi-wide
- 7 Other \_\_\_\_\_