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NORTH CAROLINA  
ALTERNATIVE ENERGY  
CORPORATION

919/361-8000  
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May 5, 1993

Louis Robinson  
Operations Manager  
Duke Memorial United Methodist Church  
504 W. Chapel Hill St.  
Durham, N.C. 27701

Dear Louis:

Enclosed are the forms I mentioned. The top sheet, titled "Guidelines for the Contents of Energy Survey Reports," contains a good outline of what you can expect from this process.

I realize that there are several steps to go through before you have final authorization to go ahead with this, but since our timeframe is fairly tight, it would be helpful if you could get going on the information gathering.

It sometimes takes a little time to get the printouts from the utilities, so if you can sign the release forms and send those back as quickly as possible, we'll get busy contacting Duke Power & Public Service.

In terms of the other forms, obviously, the more complete the information is, the better job we can do. Please get these to me by June 1. I'll send the forms from all of the participating churches up to Andy Rudin at one time.

If you have any questions, please don't hesitate to call me. I'll be out of the office a lot over the next several weeks, so you can also call Bill Warren at SunShares (596-1870). Bill is working closely with us on this, and is aware of the whole process.

I'm looking forward to meeting you and working with you on your building. It sounds like you're already doing quite a bit to stay on top of your energy costs, but I feel confident we can help you do even better.

Sincerely,

A handwritten signature in black ink, appearing to read 'Arnie', written in a cursive style.

Arnie Katz  
Senior Project Manager

c: Bill Warren

# CHURCH ENERGY CONSERVATION PROJECT

## Utility Bills Release Form

\_\_\_\_\_ United Methodist Church grants  
permission to the following companies to release available billing information  
to N.C. Alternative Energy Corporation and Sunshares.

\_\_\_\_\_  
(Name of Electric Company)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Name of Fuel Oil Supplier)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Name of Gas Company)

\_\_\_\_\_  
(Address)

By \_\_\_\_\_  
(Signature of representative) (Date)

Print Name \_\_\_\_\_ Title \_\_\_\_\_

## **Guidelines for the Contents of Energy Survey Reports**

1. The audit will be dated, and will show the exact address of the facility.
2. The audit will consist of the following basic parts:
  - a. description of each building within the facility, including its age, schedule of use, and size (floor area of conditioned space measured on the outside of the building),
  - b. description of the energy systems within the facility, including cooking and laundry, and how those systems are metered and controlled,
  - c. a summary of at least one year of energy bills listed as a baseline of energy cost and use (including electric and steam demands), with which future updates on changes in energy use and cost will be compared,
  - d. a rating of each building in annual cost per square foot and in annual BTU's per square foot,
  - e. a narrative comparison of energy use and cost in the audited facility with use and cost of similar facilities,
  - f. a separate list of recommendations for each building, listed in order of simple payback, and
  - g. a summary page showing the estimated costs, savings, and simple payback for each recommendation.
3. The overall anticipated energy reduction will not predict BTU per square foot ratings that are lower than such ratings for existing, energy-efficient buildings of similar building type.
4. The section describing the facility and/or the section describing the recommendations will include data on the measured steady-state efficiency of the heating system and the temperature of the domestic hot water.
5. An analysis will be done to demonstrate if each energy source is being purchased for the lowest practical cost.
6. In recommending ways to reduce energy cost, the auditor will consider rate changes, purchasing cheaper fuel oil, modifications to the conditions of the building when it is not occupied, consolidation of building use, reduction of air flowing out of the building, improvement in heating and cooling efficiency, balancing of heat distribution, changes in lighting, and changes in appliance use.
7. For each product or technique recommended, a descriptive sheet may be enclosed, showing a source of supply. If the auditor suggests a do-it-yourself installation, a sheet of instructions may be included. The more specific the advice, the better.
8. One and two years after the audit, the auditor will be responsible for gathering the energy data once again, and reporting the changes to the facility administrator. During those two years, the congregation can call the auditor anytime for further information.

# # #

## Data Sheet for Separately-metered building:

a. Fill out one set of these forms for each building or set of buildings that has a separate set of meters or fuel storage tanks.

b. Mail to Andrew Rudin, 7217 Oak Avenue, Melrose Park, PA 19126  
or call (215) 635-5450 or fax to (215) 635-1903

Congregation name \_\_\_\_\_

Address \_\_\_\_\_

City

Zip code

Telephone (\_\_\_\_) \_\_\_\_\_

Name of person in charge of reducing energy costs:

\_\_\_\_\_

Building type \_\_\_\_\_

(Worship/education, worship only, church with parochial school, parochial school, education, office, social hall, parsonage, rectory, convent, mobile classroom, cemetery garage, retreat house)

Total floor area of the building (measured from the outside, including the basement if it is cooled or heated intentionally or unintentionally).

\_\_\_\_\_ square feet

Year building was built: \_\_\_\_\_

Year most recently remodeled: \_\_\_\_\_

Names of the rooms inside the building:

List of rooms in the basement:

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

List of rooms on the first floor:

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

List of rooms on the second floor:

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

**The heating and cooling zones and how they are used:**

Name of zone	Time and type of activity in zone	Peak number of people

**Characteristics of the building structure:**

Type of walls: \_\_\_\_\_  
 (Examples: wood frame, brick outside and block inside, stone masonry, stucco wood frame, etc.)

Type of ceiling insulation: \_\_\_\_\_  
 (Examples: uninsulated, 3½" fiberglass, 2" rock wool, etc.)

Type of windows: \_\_\_\_\_  
 (Examples: single glass in metal frame, wood double hung, single layer stained glass, stained glass with plastic covering on outside, etc.)

Type of roof: \_\_\_\_\_  
 (Examples: flat, slate, asphalt shingle, metal, etc.)

Type of roof insulation: \_\_\_\_\_  
 (Examples: uninsulated, 3½" fiberglass, 2" rock wool, etc.)

**A brief description of the energy problems as you see them:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Type of energy metering:**

Number of electric meters: \_\_\_\_\_

If more than one, what does each electric meter serve?

\_\_\_\_\_

Number of natural gas meters: \_\_\_\_\_

If more than one, what does each gas meter serve?

\_\_\_\_\_

**Description of the heating system:**

Fuel type: \_\_\_\_\_

Distribution: \_\_\_\_\_  
(Warm air, heated water, steam)

Capacity : \_\_\_\_\_ BTU per hour

(The capacity of a gas heater is shown on its nameplate. capacity of an oil burner is determined by calling your oil dealer and asking the gallons per hour of the nozzle).

Is there a maintenance contract? \_\_\_\_\_

If so, will you send me a copy?

**Description of the heating controls?**

How many thermostats do you have? \_\_\_\_\_

What type of thermostats they?  
Standard ( )    24-hour clock ( )    7-day clock ( )

**Description of the domestic hot water system:**

Fuel type: \_\_\_\_\_ Heater type \_\_\_\_\_

Do you get a separate gas bill for domestic hot water? \_\_\_\_\_

**Description of the cooling system:**

Number of window units \_\_\_\_\_

**Central system type:**

- Reciprocating chiller with cooling tower ( )
- Centrifugal chiller with cooling tower ( )
- Direct expansion split system ( )
- Evaporative cooler ( )
- Other \_\_\_\_\_

Central system capacity: \_\_\_\_\_ tons

Is there a maintenance contract? \_\_\_\_\_

If so, will you send me a copy?

**Description of the lighting system:**

Mostly incandescent ( )      Mostly fluorescent ( )      Mixed ( )

How would you describe the quality of the lighting in most of the building?

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**Type of energy used for cooking food:**

( ) electricity      ( ) natural gas      ( ) propane

**Type of energy used for drying clothes:**

( ) electricity      ( ) natural gas      ( ) propane

**Do you have blueprints of your buildings?**

( ) yes      ( ) no

(If you have diagrams that show the layout of the building, please send a copy of them to me.)

**Have you ever had an energy survey in the past?**

( ) yes      ( ) no

(If yes, please send me a copy of the survey report.)

Thank you.