FLORIDA SOLAR ENERGY CENTER™
Creating Energy Independence

Date: February 15, 2018

Report for the period thru February 15, 2018
Submitted to
Department of Business and Professional Regulations

Grantee Name:	University of Central Florida/Florida Solar Energy Center		
Grantee Address:	1679 Clearlake Road, Cocoa, FL 32922		
Grantee's Grant Manager:	Jeffrey K. Sonne	***Telephone No:***	321-638-1406
Reporting Period:	Through February 15, 2018 (Interim)		
Project Number and Title:	**Residential Air Leakage Testing and Mechanical Ventilation Verification**		

Provide a summary of Project accomplishments to date. Include comparison of actual accomplishments to the objectives established for the period. If goals were not met provide reasons why.

Project Overview

This project should answer the following four questions regarding residential building air leakage testing and whole-house mechanical ventilation requirements as stated in the 2016 Supplement 1 changes to the 5th Edition (2014) Florida Energy Conservation Code, and now continued in the new 6th Edition (2017) Code:

- Is the new requirement to test residential air leakage being followed?
- Who is providing the air leakage testing?
- Are accurate air leakage rate test values being reported?
- Is whole-house mechanical ventilation being installed in applicable cases?

The study will be conducted in twenty four (24) single family homes throughout the State of Florida that have been permitted after July 1, 2017. Tasks will include:

a. **Home Recruitment:** After identifying eligible homes via building department searches, FSEC will mail post cards to homeowners offering $150 to allow FSEC to conduct an air leakage (blower door) test in their home and, if applicable, inspect their mechanical ventilation system.

b. **Document Review:** Each home's Energy Code compliance and building air leakage test reports will be reviewed to determine the building air leakage rate submitted for compliance and whether the test report shows the leakage rate to be at or below this level

c. **Air Leakage Testing:** FSEC will conduct a building air leakage rate (blower door) test for each project home

d. **Ventilation System Inspection:** In applicable cases, FSEC will inspect the home's mechanical ventilation system and record the system type.

The outcome of this research will be a report summarizing project activities, including home recruitment, code compliance form and air leakage test report reviews, home air leakage testing results, discussion, and any recommendations.

Interim Progress Report

Work on the project to this point has included Institutional Review Board (IRB) project review, developing a number of study documents and materials and initial homeowner recruitment activities. Specific tasks have included:

- Submitted study overview for IRB review (approval not required)
- Developed homeowner recruiting postcard (see Appendix)
- Obtained postcard printing and mailing quote
- Developed project web page (see Appendix)
- Developed Incoming Phone Call Guide and log to be used to screen potential participants
- Developed Homeowner Agreement (approved by UCF January 17, 2018)
- Developed draft testing protocol (see Appendix)
- Currently compiling new single family home address lists.

The home address lists are being compiled from addresses identified from building department searches and public record requests. To date 1,900+ addresses have been compiled from 15 Florida cities and counties. Additional address lists are currently being pursued and compiled to try to insure a wide range of jurisdictions, builders and house sizes are included in the study.

The initial postcard mailing is scheduled for the last week in February for homes permitted in July through September when it is anticipated most of these homes will be completed and occupied. To allow builders and code officials time to have learned about the testing requirement, the study will try to limit use of homes that were permitted in the first part of July. A second mailing is planned for mid to late-March as more qualified homes are completed and occupied.

After each mailing, a screener will collect contact and additional qualification information from perspective homeowners who respond to the postcard. A testing scheduler will then send Homeowner Agreements to selected homeowners, prioritizing contacts that will provide the

project with a number of jurisdictions and builders, and range of floor areas. Energy Code compliance and building air leakage test reports will then be obtained and reviewed for each house selected for the study.

It is anticipated that house testing visits will begin in mid-March and continue through early May. Data analysis, final report writing and development of any recommendations is planned for the end of April through May.

Deliverables Update

Deliverable #1 Interim Report

Completed with submission of this February 15, 2018 Interim Report.

Deliverable #2 Final Report

Due June 1, 2018.

A. Provide an update on the estimated time for completion of the project and an explanation for any anticipated delays.
No delays in meeting deliverable due dates are anticipated at this time.
B. Provide any additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit cost
No cost overruns are anticipated.
C. Identify below, and attach copies of, any relevant work products being submitted for the project for this reporting period (e.g. report data sets, links to on-line photographs, etc.)
No products have been produced as of the completion of this report.
D. Hours and budget update
Not available at this time.

This report is submitted in accordance with the reporting requirements of Award for $47,790 dated November 27, 2017.

Jeffrey K. Sonne

Signature of the Grantee's Grant Manager
Jeffrey K. Sonne

February 15, 2018

Date

APPENDIX

Homeowner Recruiting Postcard

Air Leakage Testing Verification Study Web Page

Draft Test Protocol

UNIVERSITY OF
CENTRAL FLORIDA

Florida Solar Energy Center® (FSEC®)
1679 Clearlake Road
Cocoa, FL 32922-5703
http://www.fsec.ucf.edu

HOMEOWNERS:

Participate in a home energy research study conducted by FSEC® at the University of Central Florida and earn $150!

Participation involves allowing FSEC to
test your home's air tightness and, if applicable,
inspect your whole-house mechanical ventilation system.

For more information,
call 321-638-1430 or visit
www.fsec.ucf.edu/go/airleakstudy

Don't Miss Out!

UNIVERSITY OF
CENTRAL FLORIDA

BLDG-71

WANTED:

Florida homeowners to participate in a home air tightness testing and ventilation inspection study conducted by the Florida Solar Energy Center (FSEC), a research institute of the University of Central Florida.

What is this study about?

FSEC is conducting a study funded by the Florida Department of Business and Professional Regulation to learn about compliance with new home air leakage testing and mechanical ventilation requirements.

Home air leakage test in progress. (N. Waters)

What does participating involve?

Participation involves allowing us to test your home's air leakage and, if applicable, inspect the ventilation system. The entire visit should take less than three hours.

Why should I sign up?

Testing your home's air leakage would allow us to confirm if your home's air leakage is within new Florida code requirements. We'll inform you of the test results and you'll also receive a $150 participation incentive.

Does my home qualify for the study?

If you received this postcard we believe your home qualifies for the study:

If you haven't received the post card you may still qualify for the study if you have a single family Florida home that was built in the last 6 to 8 months.

To find out more or sign up for the study, contact Wanda Dutton at 321-638-1430 or e-mail at wanda@fsec.ucf.edu.

DBPR AIR LEAKAGE TEST VERIFICATION STUDY TESTING PROTOCOL

Address _____ **Test Date** _____

AIR LEAKAGE RATE (BLOWER DOOR) TESTING

House Characteristics and Test Prep

- Confirm with homeowner(s) that no changes have been made to house since CO that might affect air leakage. Done ☐ Notes: _____
- Number of stories or split-level: 1 ☐ 2 ☐ Split ☐
- Conditioned floor area and volume measured / confirmed? ☐
- Fireplace? Y / N Type (atm. vented wood, sealed gas) : _____
- Number of recessed can lights: _____ Notes: _____
- Unvented attic? Y / N If unvented, hatch to attic opened for test? ☐
- Prepare house per air leakage testing checklist including "safeing" houses with vented combustion appliances. Done ☐

Testing

- Perform air leakage test and record results. Done ☐
    - Verified BD ring used and that it matches DG700 input BEFORE and AFTER readings? ☐
- Record any testing problems or observations _____

  _____

After Testing

- If atmospherically vented combustion equipment "safed", returned to as-found? ☐
- If unvented attic and hatch opened for test, closed after test? ☐

WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM INSPECTION

- Whole-house ventilation system present? Y / N (If not, disregard entries below.)
- Record ventilation system make and model _____
- Record ventilation system type (e.g. exhaust only, supply only, supply and exhaust w/ or w/o ERV, HRV) _____
- Record and photograph ventilation system component location(s) _____

  _____

  - Photos taken ☐
- Record how the ventilation system is controlled (e.g. remote control, wall panel) _____

  _____
- Determine if air flow balancing damper is present and note setting (approx. % open)

  Damper Present? Y / N Can determine setting? Y / N Approx. % open _____
- Record vent system interior duct diameter or cross sectional area _____
- Note type and thickness of vent duct system insulation if any.
- Record ventilation system operational status / control setting (on, off, disconnected, deactivated, timer setting, ventilation rate setting, etc.) _____

  _____
- Record and photograph ventilation system filter location and condition _____

  _____

  - Filter photo(s) taken ☐
- Record any ventilation system issues discovered and likely reasons for them (e.g. missing insulation, potential pollution sources near air intake, poorly installed or disconnected ducts, inoperable damper, unbalanced HRV or ERV) _____

  _____
- Is there evidence of occupant adjustments to the system or flow rates _____

_____

- Other observations / notes _____

_____

_____

_____

- VENTILATION SYSTEM FILTERS AND SETTINGS LEFT AS INITIALLY FOUND DONE ☐