



ENERGY STAR® QAQC: A Continuous Improvement Mechanism

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Purpose of session

- What is ICF's role?
- What are we looking for?
- What goes on in the field?
- What goes on in the office?
- What corrective actions are implemented?
- Where are we heading?
- Questions

ICF's Southern Region (Dallas & Houston)

- Comprehensive administration of numerous energy efficiency (DSM) programs for clients (typically utilities) throughout the United States
- Oversee programs for Oncor, CenterPoint Energy, Entergy Texas, AEP Texas, Public Service of Oklahoma, PNM, New Mexico Gas Company and Rocky Mountain Power (with Ecos).
- QAQC function performed since 2004
- In 2009, ~ 15,000 ENERGY STAR qualified homes moved through our programs

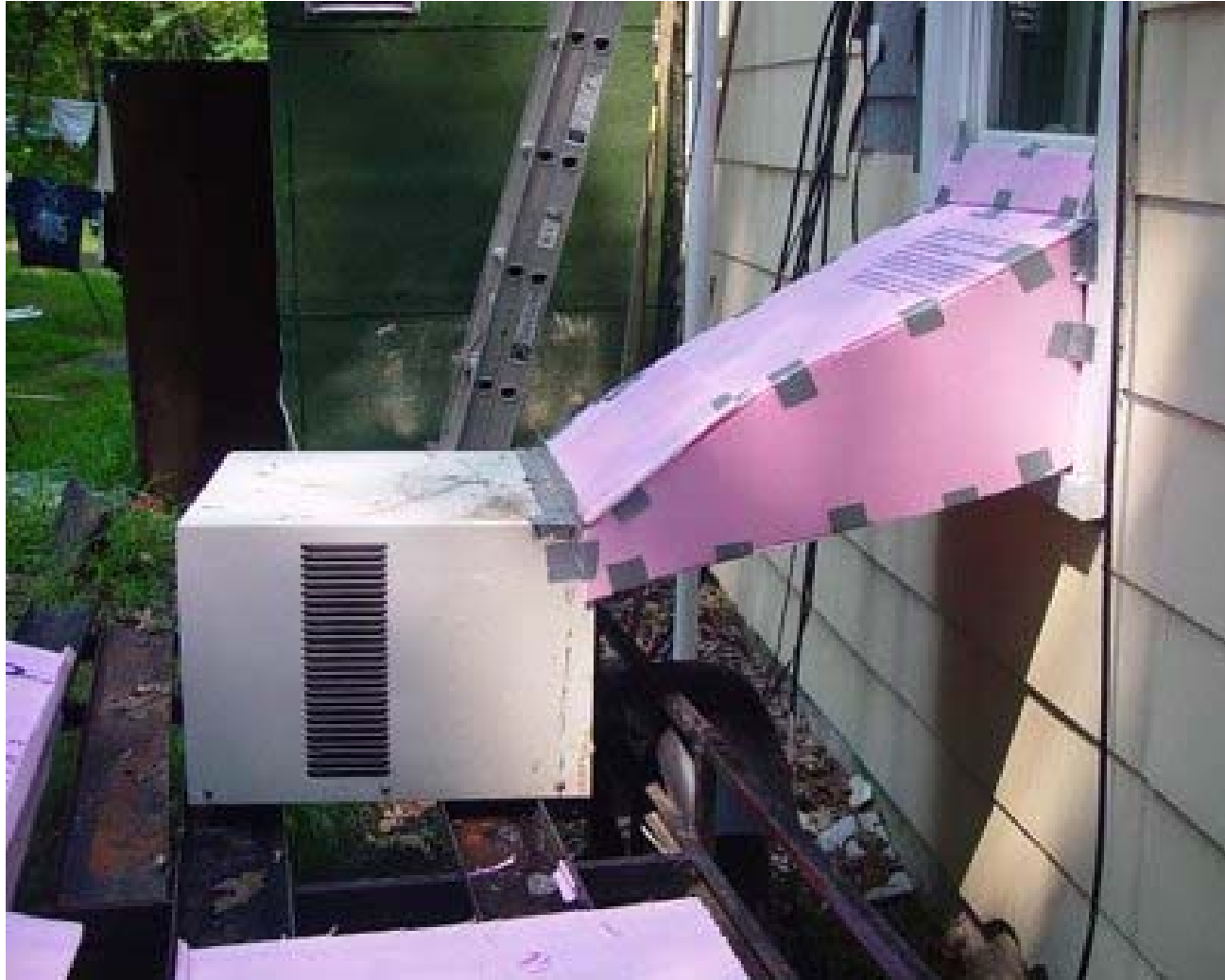
Please note:

- ICF's QAQC process is not intended to supplant RESNET's QAQC mandates
- ICF performs its QAQC tasks on behalf of its clients (typically utility companies)
- ICF's goal is continuous improvement with the HERS Rating community (and builders) in which ICF interacts (i.e. Texas HERO)
- We would like to see HERS Raters take our findings/suggestions to improve/enhance their RESNET QAQC interactions

So what are we looking for?



Properly installed/sized HVAC



Correct AHRI matching



Properly sealed/insulated ducts



Properly sealed envelopes



Other thermal bypasses



Properly installed insulation/R value



Orientation



Front/Rear Elevations



Water Heater Type/Efficiency



Other appliances



Window efficiencies



So we go out & field test

ENERGY STAR HOMES QA PROGRAM

FIELD DATA COLLECTION FORM

v2.3 04/17/2006

UTILITY PSD 2008 UTILITY ID INSPECTOR DATE BUILDER		SUBDIVISION PLAN ADDRESS CITY ZIP		ELECTRIC METER GAS METER FLOORS ABOVE GRADE ORIENTATION SQUARE FOOTAGE	
FOUNDATION TYPE SOG BSMT/CRAWL, CONDY COND BSMT/CRAWL, WALL R		UNCOND BSMT/CRAWL EXTERIOR WALL WALL TO COND SPACE INSULATED WALL R FRAME FLOOR ABOVE		ABOVE GRADE WALLS R-VALUE EXTERIOR SHEATHING MAT EXTERIOR SHEATHING R FRAMING	
FOUNDATION NOTES				AG WALL NOTES	
DOORS TO COND SPACE FRONT REAR GARAGE/OTHER		R-VALUE N/A N/A		ATTIC CATHEDRALIZED ATTIC? RADIANT BARRIER - ROOF RADIANT BARRIER - CEILING ATTIC/FLAT CEILING VAULTED CEILING SERVICE AREAS ATTIC WALLS FRAME FLOOR	
DOOR NOTES		ATTIC NOTES		ATTIC TBC SAFFLES (terminate above insulation at soffit vents) ROSEWELLS (insulation in full contact with backside air barrier) SHAFT PENETRATIONS (fully sealed w/ appropriate materials) ATTIC ACCESS (gasketed, insulated) RECESSED LIGHTS (ICAT labeled, sealed)	
ATTIC TBC NOTES					
WINDOWS PANELS LOWE FRAME U SHGC					
WINDOW NOTES					
COOLING SYSTEM 1		HEATING SYSTEM 1		DHW SYSTEM 1	
PRESENT? TYPE HANGTAG EFFICIENCY EFFICIENCY UNIT HANGTAG KB# MANUFACTURER CONDENSER MODEL # ARI # VERIFIED EFFICIENCY EFFICIENCY UNIT VERIFIED KB# AIR HANDLER LOCATION		PRESENT? TYPE FUEL HANGTAG EFFICIENCY EFFICIENCY UNIT HANGTAG KB# MANUFACTURER AH MODEL # COLLURANCE MODEL # VERIFIED EFFICIENCY EFFICIENCY UNIT VERIFIED KB# AIR HANDLER LOCATION		PRESENT? TYPE FUEL HANGTAG EFFICIENCY EFFICIENCY UNIT HANGTAG CAPACITY (gwh) MANUFACTURER MODEL # VERIFIED EFFICIENCY EFFICIENCY UNIT VERIFIED CAPACITY (gwh) TANK INSULATION LOCATION	
EXPAND FOR SYSTEM 2 EXPAND FOR SYSTEM 3 EXPAND FOR SYSTEM 4		NONE NONE NONE		NONE NONE NONE	
SPACE COOLING NOTES		SPACE HEATING NOTES		DHW NOTES	
DUCT SYSTEM 1		PRESENT? CFM25 ERRORS CFM-25 ERRORS LOCATION INSULATION THERMOSTAT		NONE NONE NONE	
DUCT NOTES					
LEAKAGE INFILTRATION CFM @ 50ps DUCT LEAKAGE (25Pa) COMPLIANCE DUCT LEAKAGE (-25Pa) COMPLIANCE		BRANDING LABEL ON BREAKER BOX? BRAND USE TYPE TYPE		LIGHTING AND APPLIANCES DISHWASHER REFRIGERATOR CLOTHES WASHER CEILING FANS EXHAUST FANS	
LEAKAGE NOTES		BRANDING NOTES GWS TBC sticker incorrect address		APPLIANCE NOTES	
ACCOUNT MANAGER FOLLOW-UP IMMEDIATE ACTION				QA PROCESS IMPROVEMENT QUESTIONS	
GOOD WORK				PROBLEMS	
NEEDS IMPROVEMENT				SUGGESTIONS	



.. and test

- In 2009, ICF/sub contractors tested ~ 220 ENERGY STAR Homes in Texas, Oklahoma, New Mexico and Utah



..and then we start our analysis

- Plan requests from builder and *REMRate* files are requested for every home
- If sampled home, we expect projected file
- If tested home, we expect updated REM file with testing data
- Probably most difficult portion of process (bottleneck) for various reasons
- All analysis performed by ICF staff that are HERS Raters

2009 General Results

- Overall, we have very few problems with homes that we tested/analyzed.
- Overwhelmingly HERS Raters appreciate our analysis and shadow us when possible (over 80 HERS organizations).
- Utilities are very pleased that our analysis, while very positive, actually finds issues that need to be dealt with.

However, we did encounter some issues in 2009:



Issue #1: Duct leakage

- Tulsa
- Production builder
- Couldn't pressurize
- Alerted builder
- Corrected problem
- Thankful for alert



Issue #1: Duct leakage

- Fort Worth
- Production builder
- Extremely high LTO
- Alerted builder
- HVAC corrected issue



Issue #1: Duct leakage

- Dallas
- Production builder
- Couldn't pressurize
- Alerted builder
- Thankful for alert
- HVAC Corrected issue



Issue #1: Duct leakage

- Salt Lake City
- Production builder
- Could pressurize for LTO, but not total
- Alerted builder to issue



Issue #1: Duct leakage

- Albuquerque
- Production builder
- Could pressurize, but exceeded threshold (Rater concurred)
- Working with builder/rater correcting this



Issue #2: Correctly reported HVAC efficiency information

- “Hang tag” is not acceptable
- Found a large % of HERS Raters not checking AHRI database
- Utilities want accurate info to claim “extra” savings (i.e. 13 SEER vs 14.5 SEER)
- Starting to offer AHRI training for HERS Raters

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- [Verify Certificate](#)
- [Non-AHRI Certified Equipment Challenge Test Results](#)
- [AHRI Announces New Certification Mark; Implementation Schedule](#)
- [Find ENERGY STAR Qualified Air Conditioning and Heat Pump Systems](#)
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So what do we do when we find this stuff?

- If structural/mechanical, we immediately contact builder
- If testing issues and not noticeably egregious, we complete field testing and conduct plan/REM analysis (annual follow up)
- If it's egregious, we contact rater and schedule a site meeting as soon as possible.

Next

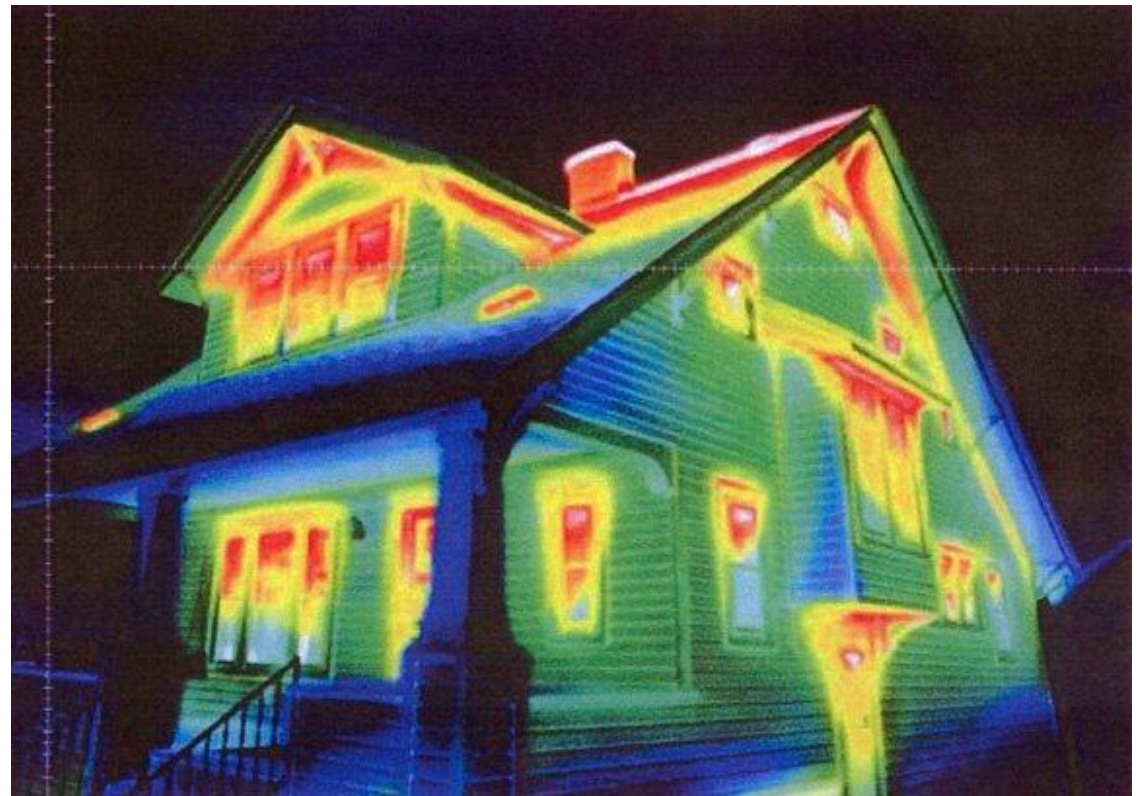
- Typically, resolution is achieved.
- However, if resolution isn't achieved, and problems persist, HERS rater is deactivated from Program and Provider is notified.
- 30 day corrective period follows
- If resolution is achieved, reinstatement follows. If not, then suspension remains for remainder of year. Builders notified.

Once again...

- ICF's primary goal is to spur continuous improvement, not get HERS Raters in trouble
- Open to our own process improvement
- Adapt to RESNET standards when possible

Possible QAQC Upgrades

- Integrated Thermography
- Random WFA calculation (when logistics allow)
- Random Manual J/Manual D calculations



Questions/Suggestions



Info

Websites:

Oncor ESH: <http://www.texasenergystarhome.info/>

CenterPoint ES: <http://www.houstonenergystarhomes.com/builders.htm>

Entergy Texas ESH: http://www.energy-texas.com/energy_efficiency/es_overview.aspx

AEP Texas ESH: <http://www.southtexasenergystar.com/index.html>

PSO ESH: <http://www.psoenergystar.com/>

PNM/New Mexico Gas Company ESH: <http://nmsaves.com/>

Rocky Mountain Power ESH:

http://portal.ecosconsulting.com/rmp_energystar/index.html

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Thanks for attending!

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EVER
GIVE UP!

