



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Weatherization Assistance Program Health and Safety Update



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March 2017

Health & Safety Comment Summary

- **Increased paperwork**

- Client notification requirements in client education require much additional paperwork.
- Wanting to remove client signature requirements from certain hazard notification forms (similar to deferral language above).
- Wanting to reduce written notifications of hazards requirements to specific circumstances

- **Radon**

- Concerns over informed consent requirement
- Clarification requested of where precautionary measures and informed consent are necessary
- Clarification of “mitigation” requested
- Concerns over increased H&S costs in high radon areas
- Concerns over State restrictions/requirements around providing radon services (CA)
- Request removal of listed precautionary measures and vapor barrier installation standards, they should be in field guides

Health & Safety Comment Summary cont...

- **Latitude in H&S vs. IRM**
 - Requesting latitude in definition of H&S vs. IRM - Both support of and opposition to defining EMC and H/S; frequent requests for latitude in definitions
- **Deferral/Referral**
 - Confusion about deferral/referral requirements, especially when other resources are scarce
 - Concerns over deferral notification requirements
 - Questions about waiting list re-instatement
- **ASHRAE compliance**
 - Increased flexibility requested, e.g., not always suitable for housing stock
 - Objections to client refusal of fans equaling deferral
 - Objection to adoption of 62.2-2016, wish to stay with 2013 version

Health & Safety Comment Summary cont...

- **Asbestos**

- Testing issues: Ask for allowance to conduct environmental asbestos testing; Questioning availability of personal monitors that detect asbestos; indicating all known test methods are inadequate for vermiculite
- Friable asbestos – Definition (some recommend DOE develop definition, or point to existing definition)
- Training requirements clarification
- Concerns over ability to identify ACM without a license

- **Combustion and Cooling Appliance Issues (includes safety devices)**

- CAZ testing, fireplace, CO -- Do not like requirement/language, request clarification for fireplace testing procedures, request additional language describing what to look for when inspecting solid fuel burning equipment, want more detail on CO device requirements
- Object to requiring removal of unsafe secondary units, want to allow “abandonment”

Health & Safety Comment Summary cont...

- **At-risk – Cooling**

- Concerns about defining ‘at risk’ for cooling measures, want it to be based solely on CDD, similar to heating replacement requirement

- **In-progress Inspections**

- Concern over requirements for in-progress inspections to evaluate worker practices, i.e., safe work practices, lead safe work, OSHA requirements. Adds to expenses in rural areas, WAP monitors may not be qualified to evaluate OSHA compliance, etc.

- **Code Compliance**

- Opposition to code compliance beyond scope of Wx
- Concern over liability/ability of workers to cite specific codes triggering code compliance work
- Concern over code officials requiring WAP to correct non-WAP-related issues
- Concerns that guidance allows insulation over live K&T
- Concerns over need to hire licensed electricians OR have unqualified staff provide client information about electrical hazards

H&S Updates: 62.2 and Radon

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Standard 62.2

- Important changes for WAP in 2016 edition
- Important changes that just missed the 2016 edition
- Important efforts underway
- Reminders

Important changes in 2016

- Multifamily (means 2+ units)
 - 62.2 now applies to all MF dwelling units



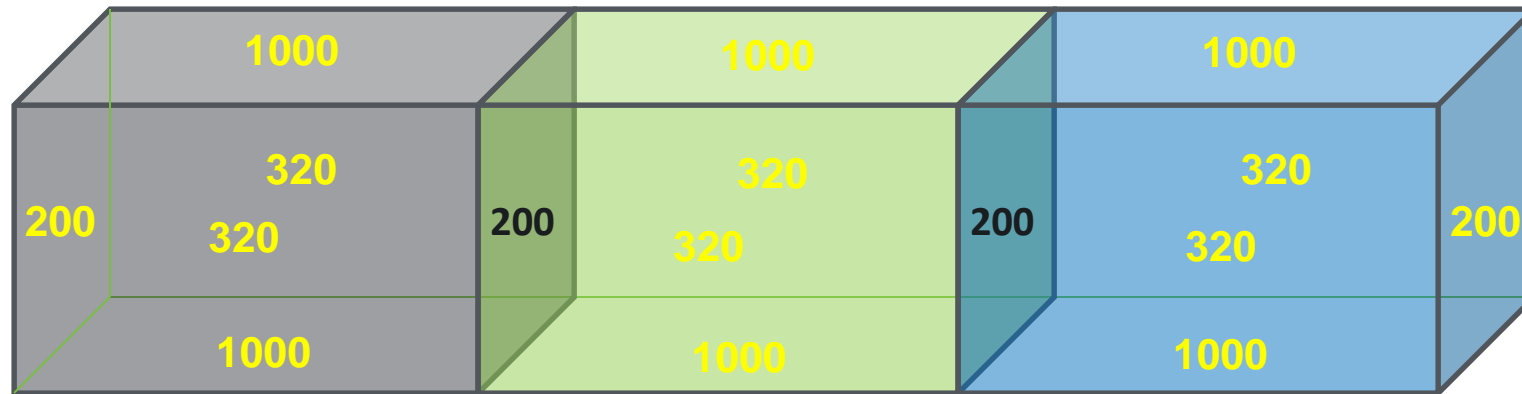
Important changes in 2016

- Multifamily (means 2+ units)
 - Infiltration credit now available for HORIZONTALLY-ATTACHED units (e.g. row houses)
 - Infiltration credit based on blower door test of the individual unit, reduced by fraction of surface area that is to other units/garages



Multifamily Infiltration Credit

Consider a triplex, each unit is 40' x 25' with 8' ceilings



Total surface area per unit is $1000 \times 2 + 320 \times 2 + 200 \times 2 = 3040$ sq. ft.

Infiltration credit (as a percentage of single-family calculation):

End units get $(3040 - 200) / 3040 = 2840 / 3040 = \underline{93.4\%}$

Middle unit gets $(3040 - 400) / 3040 = 2640 / 3040 = \underline{86.8\%}$



ASHRAE 62.2-2016 Ventilation

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New or existing construction Existing ▾

Dwelling unit is Attached to other dwelling unit(s) ▾

Only walls are in common with other dwelling units Yes ▾

Use infiltration credit Yes ▾

Closest weather station United States ▾

New York ▾

Glens Falls AP ▾

Weather and shielding factor [1/hr] = 0.51

Floor area [ft² ▾]

Number of occupants 3 ▾

Dwelling height [ft ▾]

Area of common walls [ft² ▾]

Envelope area adjoining garage [ft² ▾]

Remaining envelope area [ft² ▾]

Total envelope area [ft² ▾] = 1600

Measured leakage @ 50Pa [CFM ▾]

☐ **Use Advanced Blower Door Inputs**

☐ **Use Local Ventilation Alternative Compliance**

Important changes in 2016

- Controls/Override
 - Intended for maintenance, avoid bringing in bad outdoor air
 - Includes, but IS NOT LIMITED TO:
 - Switch
 - Dedicated circuit breaker
- Controls must be labeled with text or icon
- In multifamily the control does not have to be readily accessible to the occupants



Important changes in 2016

- Floor area definition
- Clarifies that floor area is based on finished space
 - “finished” means that surfaces are like other parts of the home
- This is just the minimum; can still use unfinished areas if you want, but you don't have to

Changes that just missed 2016

- Passing combustion safety testing per BPI-1200 (and SWS redline version) complies with section on avoiding excessive depressurization
- Commonly-used equation for infiltration using single-point blower door test included

Efforts underway

- Multifamily working group aims to strengthen MF specs:
 - Compartmentalization
 - Ventilation system type restrictions
 - Infiltration credit
- Cleaning up language – make it easier to follow

Reminders

- If you use the alternative compliance path (Appendix A)
 - Increase flow for single whole-dwelling fan
 - DO NOT need to add local exhaust in each bathroom and kitchen
- You do not have to install a wall switch for whole-dwelling fans
- You do not have to add exhaust if supply or balanced would be better in a home

STANDARD 62.2 USER'S MANUAL

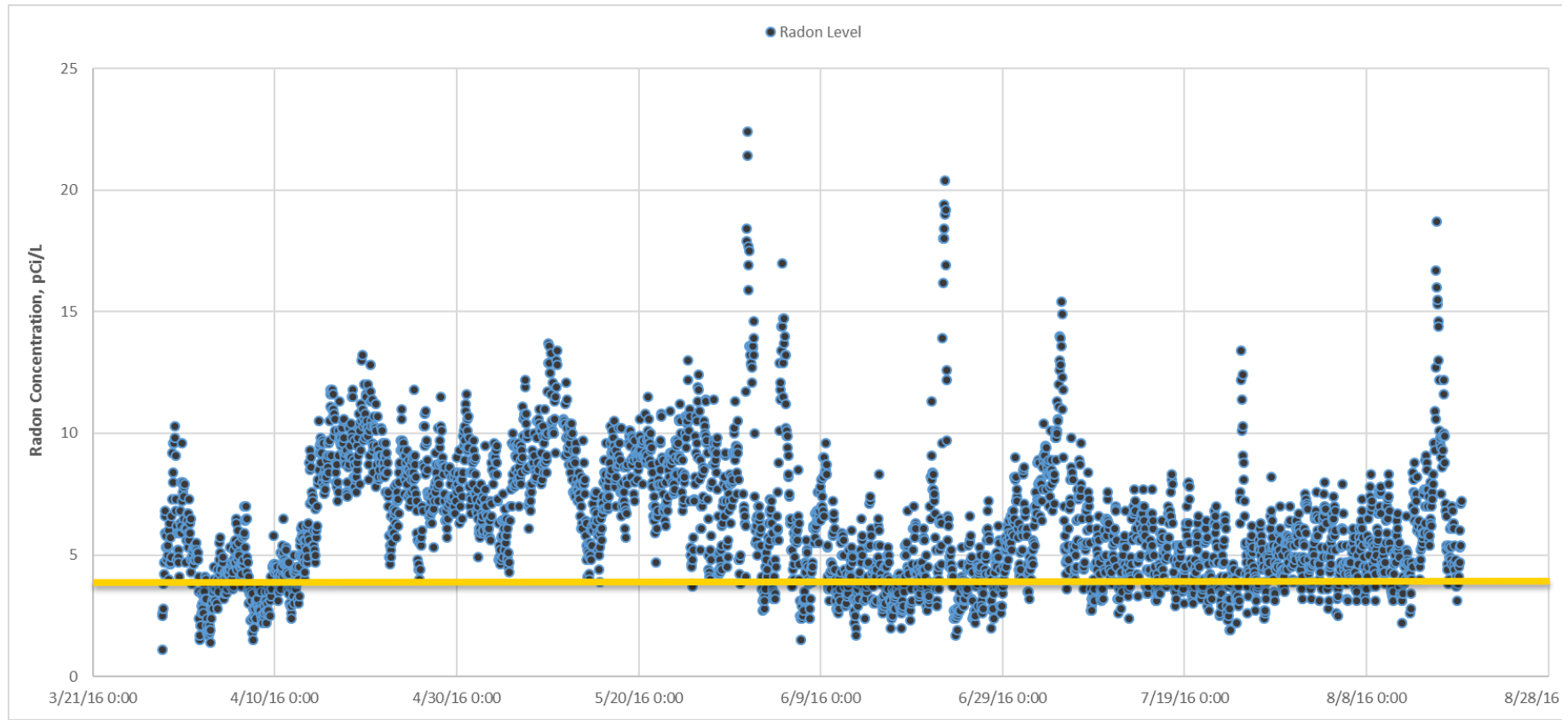
Based on
ANSI/ASHRAE STANDARD 62.2-2016
*Ventilation And Acceptable Indoor Air Quality In
Residential Buildings*

This manual provides

- Explanation of Standard 62.2's requirements
- Guidance on ventilation systems and the building envelope
- Information on whole-building ventilation, local demand-controlled exhaust, and source control
- Recommendations on single-family houses and dwelling units in multifamily structures, including manufactured and modular houses



- Studies underway to understand impacts of weatherization practices on radon
 - Expected to inform policy going forward
- Project design
- Timeline



Studies underway

- HUD-funded study (BARRIER study)
- Two treatment options
 - “business as usual”
 - “enhanced”
- Target of 40 “business as usual”, 80 “enhanced”
- Concurrent control homes (no Wx) to control for weather

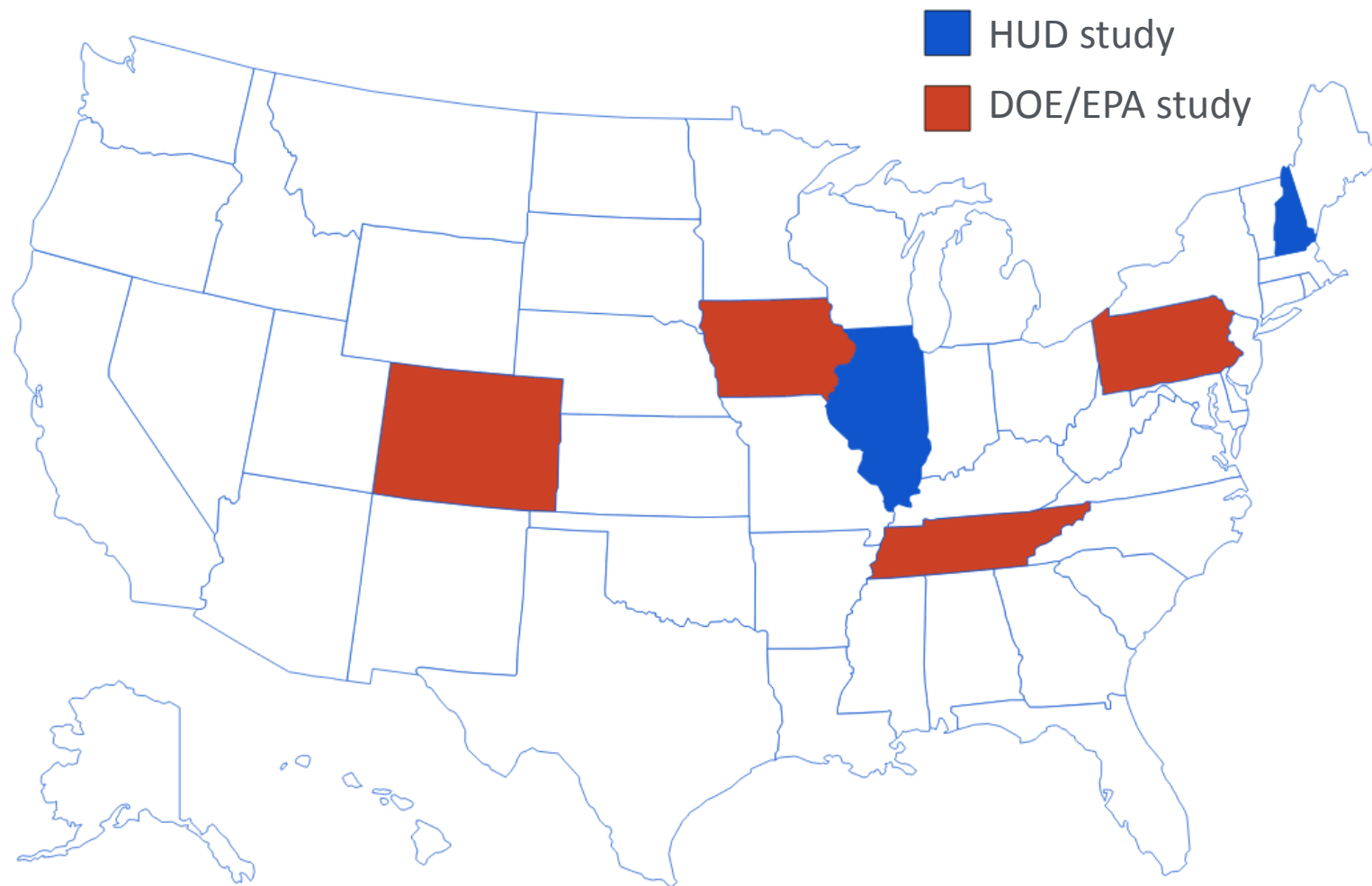
Studies underway

- DOE/EPA study
- 200 “standard weatherization” homes
- 40 control homes

“Standard” Practice

- Ground covers over bare dirt
 - Properly sealed with appropriate adhesives
 - Run up foundation walls when appropriate
- Sealed sump pump covers
- ASHRAE 62.2-compliant ventilation





Study design

- Radon can vary widely over time
- Calculate changes from before to after weatherization in treatment homes
- Calculate changes in control homes at the same time
- “Difference of differences”

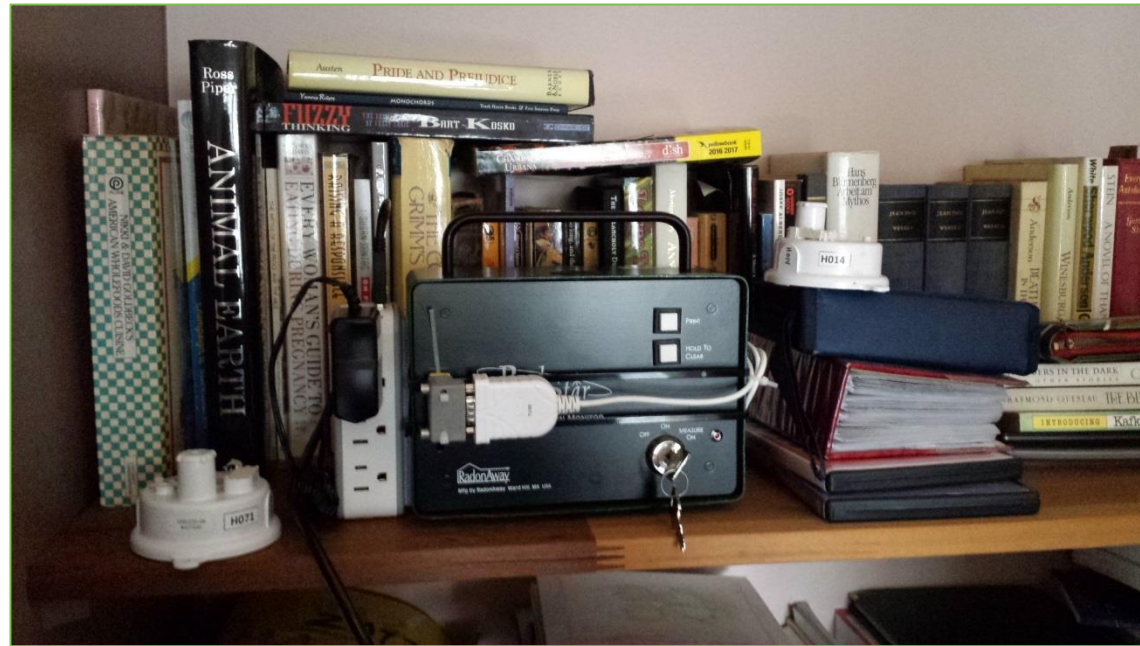
Instrumentation

- Treatment homes – electrets (2 weeks)



Instrumentation

- RadStar 300 CRMs, modified for long-term recording



Timeline

- BARRIER study (HUD) completion date 10/17
- DOE/EPA study completion date 12/19