# **RESNET QA ROUNDTABLE**

A WHOLE NEW WORLD....

Presented by

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February 17, 2015



# **PRESENTATION OUTLINE**

Poll...

RESNET's New Tools for Quality Assurance Designees... a small new world

Implementation of the New RESNET Quality Assurance Program... a whole new world



RESNET QA Roundtable, A Whole New World....

# **RESNET'S NEW TOOLS FOR QA DESIGNEES**

- QA Webpage
- QA Process Document
- Templates
- Annual QA Submittal Page/Process
- QA Field & File Checklist
- EPA ENERGY STAR QA Checklist
- Updates to RESNET Buildings/Rater Registry



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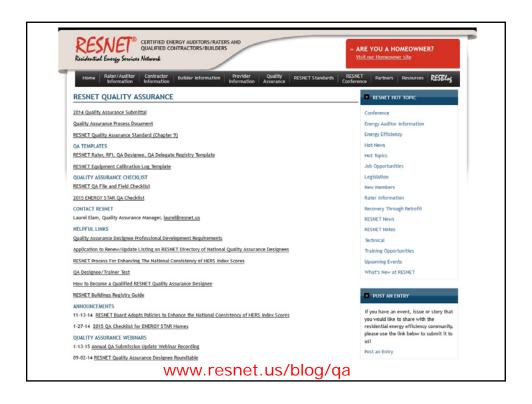
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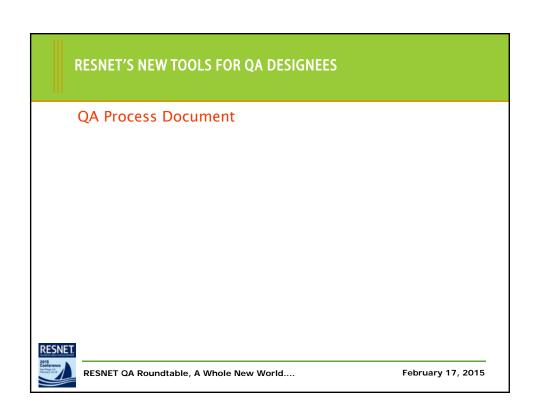
# **RESNET'S NEW TOOLS FOR QA DESIGNEES**

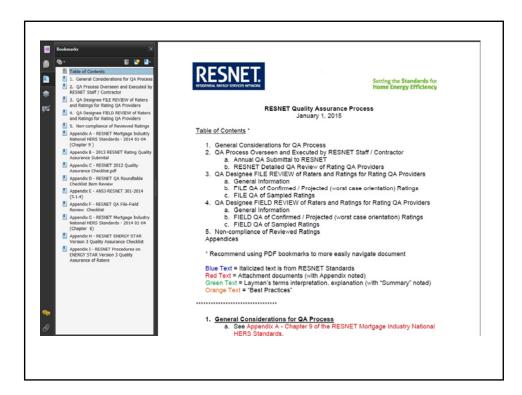
**QA** Webpage



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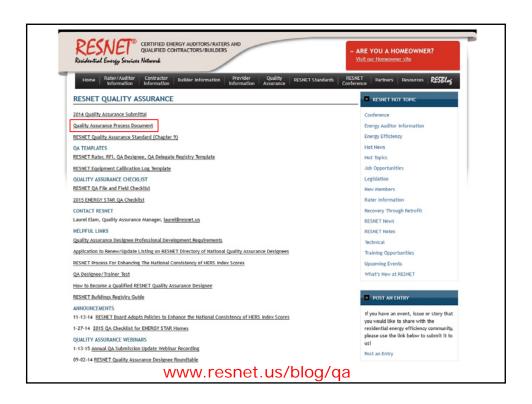
# 3. QA Designee FILE REVIEW of Raters and Ratings for Rating QA Providers

- i. 904.4.1.1 For each Rater, the Provider's QA Designee shall be responsible for an annual QA file review of the greater of one (1) home or ten percent (10%) of the Rater's annual total of homes for which Confirmed or Sampled ratings were provided. When determining the number of homes to review for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 homes x 10% = 10.1 means that 11 homes shall be reviewed
- 904.4.1.2 A QA file review shall be conducted on an ongoing basis as appropriate for the volume of ratings being completed, and at a minimum quarterly. The results of the review are submitted
- annually.

  iii. 904.4.1.3.6 Confirm that paper and/or electronic files are being maintained and archived by Raters for each rating, including the Energy Simulation File and all supporting documentation required to validate the inputs into the rating software file (e.g., architectural drawings, threshold specifications, field data). These files shall be maintained a minimum of three (3) years.

Summary: Ten percent of each Rater's rated homes must receive a quality assurance review of the rated home's electronic

- iv. See ANSI 301, Section 5.1.4 for a definition of Confirmed, Sampled and Projected Ratings (see Appendix E).
  - 1. Confirmed Rating A rating that has all rated features of the home verified in the field and entered into the rating software.
  - 2. Sample Rating A rated home that is part of a group of homes where rated features are field verified in one or more homes in the group. The inputs to the rating software reflect a worst case analysis and not the actual conditions found in the field.



### **RESNET'S NEW TOOLS FOR QA DESIGNEES**

### **QA Process Document**

- · Webinars on how to use QA Process Document
  - March
  - April
  - May
  - · Also Posted on QA Webpage



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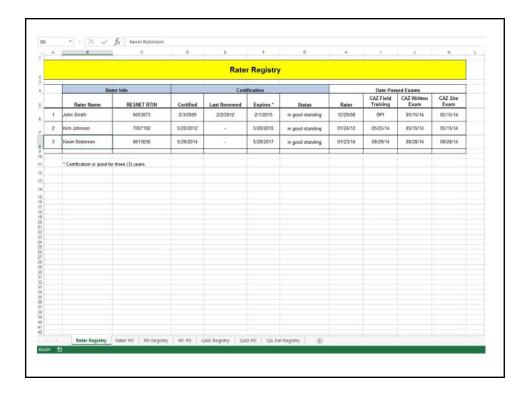
# **RESNET'S NEW TOOLS FOR QA DESIGNEES**

# **Templates**

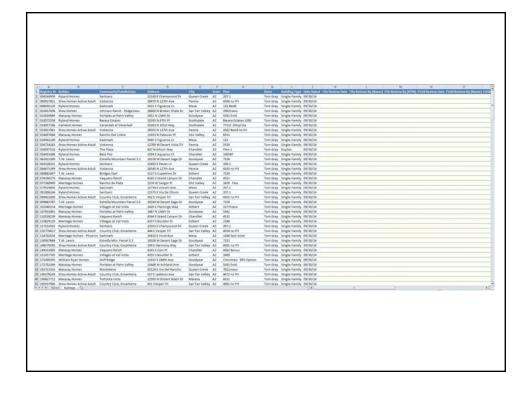
- RESNET Rater, RFI, QA Designee, QA Delegate Registry Template
- RESNET Equipment Calibration Log Template
- QA Template Export from Registry

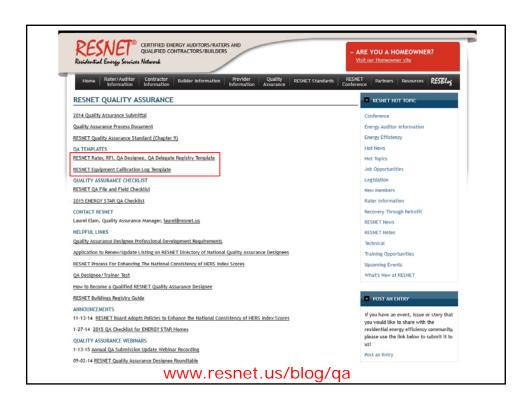


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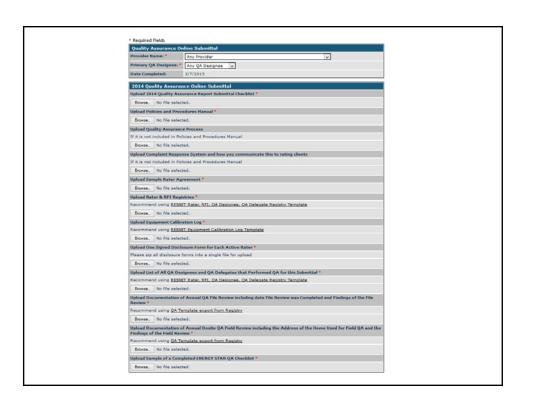
		C	D	E	F:	G	H	1
							Updated:	11/26/14
Diag	nostic Tool		Last Calibration	Next Calibration				
Description	inventory #	Serial #	Date	Date	Assigned To	Calibrated By *	confirmed	Status/Comment
DG3	hgt003	4480-35	2/14/2014	02/14/15	John Smith	John	ad	January Comment
DG3	hgt210	5278-45	3/5/2014	03/05/15	Office	TEC	ad	"Standard" for calibration
DG700	hgt054	5378-45	4/28/2014	04/28/15	John Smith	John	ad	
DG700	hgt057	5274-45	4/28/2014	04/28/15	Kim Johnson	John	ad	
DG700	hgt211	5262-45	4/28/2014	04/28/15	Keyin Robinson	John	ad	
DG700	hgt005	4268-45	4/28/2014	04/28/15	Karen O'Tool	John	ad	
DG700	hgt009	5348-45	4/28/2014	04/28/15	Eric Beacon	John	ad	1
DG700	hgt013	6217-45	3/26/2014	03/26/15	Office	TEC	ad	"Standard" for calibration
Minneapolis Blower Door	hgt002	3866-35	4/28/2014	04/28/15	John Smith	John	ad	
Minneapolis Blower Door	hgt006	4795-45	4/28/2014	04/28/15	Kim Johnson	John	ad	
Minneapolis Blower Door	hgt059	6219-4s	4/30/2014	04/30/15	Kevin Robinson	John	ad	
Minneapolis Blower Door	hgt007	3846-35	4/28/2014	04/28/15	Karen O'Tool	John	ad	
Minneapolis Blower Door	hgt015	4794-45	4/30/2014	04/30/15	Eric Beacon	John	ad	
Minneapolis Ductblaster	hgt001	6220-4s	4/28/2014	04/28/15	John Smith	John	ad	
Minneapolis Ductblaster	hgt014	5364-45	4/28/2014	04/28/15	Kim Johnson	John	ad	
Minneapolis Ductblaster	hgt025	4725-45	4/30/2014	04/30/15	Kevin Robinson	ndot	ad	
Minneapolis Ductblaster	hgt029	3867-35	4/28/2014	04/28/15	Karen O'Tool	John	ad	
Minneapolis Ducthlaster	hgt032	6231-4s	4/30/2014	04/30/15	Eric Beacon	ndot	ad	
* All monometers not sent to The	Energy Conservatory for	r calibration ar	e calibrated in-hou	se using the TEC app	roved calibration met	hodology.		







	A			D	- 1	1.
i	2014	Quality	y Assurance Report Submittal Checklist			
ı	Provider Primary Review I	QA Designee:				
,	Note: Ti	his Checklist	and the other documents noted below as "upload" will be uploaded at the time of submitting your Quality Ass	urance docu	mentation to RESNET at	www.Lesnet.us/programs/pad/checklist.aspx
ı		Section		- In	Out of Compliance	
	1		Onfirm "Home Energy Rating Provider's Operation Policies and Procedures" in compliance with current requirements of RESNET Standards Subsection 102.1-4.1 and includes "Written Conflict of Interest Provisions" and "Written Exter Discipline Procedures" Will need to Upload Policies and Two-reducedures' Samual.	•	O	Comment (required if "out of compliance")
Ļ	2	102.1.4.14	Written Quality Assurance Process that conforms to current requirements of Chapter 9 of RESNET Pandards and any specific QA requirements for other Provider categories.  Will need to Upload Quality Assurance Process [[if it no in childred in Policies and Procedures Manual]   Complaint response systems, porcess for informing upurchasers and receipients of ratings about the	•	0	
	3	102.1.4.11	complaint response system, process or more imaginate doesn't and receptors or a range acoust one complaint, system, and records of complaints, for Provider.  Will need to typload complaint response system and how you communicate this to rating clients (if it is not included in Policier and Procedure Manual)		0	
	4	102.14.13	Confirm that the site data collection manual, at a minimum, includes or references Appendix A of the RESNET Standards, is provided to Raters, and Raters are confirming Minimum Rated Features in accordance with 2016-7 and Appendix A. Explain how this litem is enforced (if it is not included in Pulicies and Procedures Manual)	٠	0	
	5	102.1.2.6	All signed Rater agreements in compliance with 102.1.26 Will need to Dyboad Sample Rater Agreement.		0	
	6	102.1.2	Documentation that Raters and RFF's meet the certification provisions outlined in Chapter 2 of RESNET Standards (Sections 204.2.2 and 204.2.3).	٠	0	
		102.1.2.4, 102.1.2.5,	Current copy of Provider's Rater and Rating Field Inspector (RFI) registry which includes tracking of the following: date of certification/recritification; date pass the Rater/RFI exam, date(s) passed CAZ exams, professional development bours.		0	

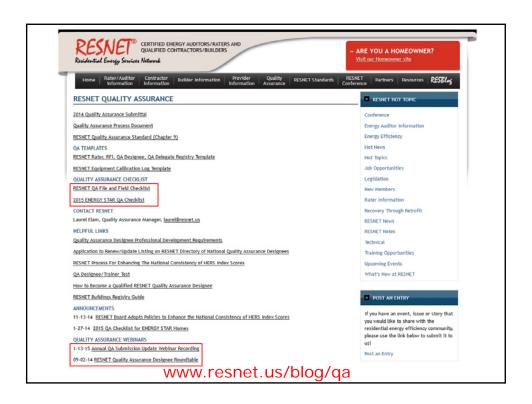


# RESNET'S NEW TOOLS FOR QA DESIGNEES QA Field & File Checklist EPA ENERGY STAR QA Checklist RESNET QA Roundtable, A Whole New World.... February 17, 2015

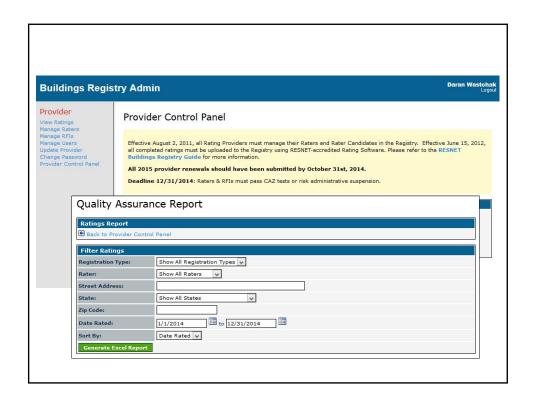
RESNET QA File-Field Review Checklist	ver 1.1
Street Address	City
State	ZIP
Date Rated	Date Reviewed
Date Approved	Upload Date
Rating ID	ENERGY STAR®? Yes No
Rating Company	Builder
Rater	Field Inspector
Quality Assurance Provider	QADIQADD
Element	No Yes N/A Notes
Does this address have a duplicate in the Registry?	
Is the ZIP Code correct for the address?	
Does the Rater match the RTIN?	
Does the Provider match the Provider ID?	
Did the Rater provide a signed Standard Disclosure Form?	
Is the envelope ceiling area $\geq$ the envelope floor are	a?
If the envelope ceiling area is > envelope floor area, the Rater indicate any vaulted or sloped ceilings?	did U U U
Divide the conditioned volume of the home by the conditioned floor area. Is the result (average ceiling height) reasonable and match the site data collected	
Multiply the foundation perimeter by the number of stories. Divide the above grade wall area by that res get the approximate wall height. Is this value reason and close to the average ceiling height calculated previously?	
If vaulted or sloped ceilings are in the simulation file subtract the flat ceiling area from the envelope floor Divide the sloped/vaulted ceiling area by that result	area.

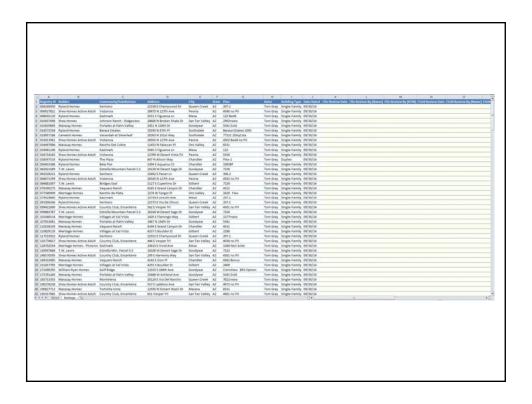
### ENERGY STAR Certified Homes, Version 3 (Rev. 07) 2015 Rater Quality Assurance Checklist Home Address Zip Code Action Items / Summary of QA If any Item marked "Must Correct," an action summary document shall be attached Thermal Enclosure System Rater Checklist Passed Must Not N/A 2. Quality-Installed Insulation 2.1 Ceiling, wall, floor, and slab insulation levels shall comply with one of the following options 2.1.1 Meet or exceed 2009 IECC levels OR; 2.1.2 Achieve ≤ 133% of the total UA resulting from the U-factors in 2009 IECC Table 402.1.3, excluding fenestration and per guidance in Footnote 3d, AND home shall achieve ≤ 50% of the infiltration rate in Exhibit 1 of the National Program Requirements 2.2 All ceiling, wall, floor, and slab insulation shall achieve RESNET-defined Grade I installation or, alternatively, Grade II for surfaces that contain a layer of continuous, air impermeable insulation ≥ R-3 in Climate Zones 1 to 4, ≥ R-5 in Climate Zones 5 to 8 3. Fully-Aligned Air Rarging. Meet or exceed 2009 IECC levels OR: 0 0 3. FPG IT WITHOUT EACH STATE 3. 1.3 Air barrier fully aligned with the insulation at insulated Attic knee walls. At exterior surface of walls in all climate zones; and also at interior surface of walls for Climate Zones 4-8 4. Reduced Thermal Bridging 4.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the inside face of the exterior wall below at these levels; CZ 1-5: ≥ R-21; CZ 6-8: ≥ R-30 0 0 0 0 5. Air Sealing 5.1 Penetrations to unconditioned space fully sealed with solid blocking or flashing as needed and gaps sealed with caulk or foam 5.1.4 Bathroom and kitchen exhaust fans 5.1.5 Recessed lighting fotures adjacent to unconditioned space ICAT labeled and fully gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to ≥ R-10 in CZ 4 and higher to minimize condensation potential. 5.1.6 Light tubes adjacent to unconditioned space include lens separating unconditioned and conditioned space and are fully gasketed. 5.3 Other openings other openings 5.3.1 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket 5.3.2 Attic access panels and drop-down stairs equipped with a durable ≥ R-10 insulated cover that is gasketed (i.e., not caulked) to produce continuous air seal when occupant is not accessing the attic 5.3.3 Whole-house fairs equipped with a durable ≥ R-10 insulated cover that is gasketed and either installed on the house side or mechanically operated

1. Review of HVAC System Quality Installation Contractor Checklist				
1.1 HVAC System Quality Installation Contractor Checklist collected for records, with no items left blank.	0			
1.2 Review the following parameters related to system cooling design from the HVAC Contractor Checklist (Contrac parenthesis):	tor Checklist	Item#i	ndicated	in
1.2.3 Number of occupants (2.6) is within ±2 occupants in rated home				
1.2.4 Conditioned floor area (2.7) is within ±10% of conditioned floor area of rated home				
1.2.5 Window area (2.8) is within ±10% of calculated window area of rated home				
1.2.6 Predominant window SHGC (2.9) is within 0.1 of predominant value in rated home				
2. Duct Quality Installation - Applies to All Heating, Cooling, Ventilation, Exhaust, and Pressure Balancing Ducts	Passed	Must Correct	Not Visible	N/A
<ol> <li>Connections and routing of ductwork completed without kinks or sharp bends.</li> </ol>				
2.2 No excessive coiled or looped flexible ductwork.				
2.4 Flexible ducts supported at intervals as recommended by mfr. but at a distance ≤ 5 ft.				
2.8 Bedrooms pressure-balanced using any combination of transfer grills, jump ducts, dedicated return ducts, and / undercut doors to either: a) provide 1 sq. in. of free area opening per 1 CFM of supply air, as reported on the contractor-provided balancing report; or b) achieve a Rater-measured pressure differential ≤ 3 Pa with respect the main body of the house when all bedroom doors are closed and all air handlers are operating			0	
3. Duct Insulation - Applies to All Heating, Cooling, Supply Ventilation, and Pressure Balancing Ducts	-			
3.1 All connections to trunk ducts in unconditioned space are insulated.				
3.2 Prescriptive Path: Supply ducts in unconditioned attic have insulation ≥ R-8 Performance Path: Supply ducts in unconditioned attic have insulation ≥ R-6.	0			
3.3 All other supply ducts and all return ducts in unconditioned space have insulation ≥ R-6.				
3.3 All other supply ducts and all return ducts in unconditioned space have insulation ≥ R-6. 4. Duct Leakage - Applies to All Heating, Cooling, and Balanced Ventilation Ducts	_			









# Overall goals for RESNET QA

- Fairness to all (Providers, Raters, QA Designees) by creating as "level of a playing field" as possible.
- Ratings are delivering what they promise; narrowing the gap between the theory of what a rating is supposed to be and actually is.
- Consistency in the ratings completed by Raters.



RESNET QA Roundtable, A Whole New World....

February 17, 2015

### IMPLEMENTATION OF THE NEW RESNET QA PROGRAM

### It's a Whole New World!

It is going to take time to implement the new program! Changes already completed are only <u>the beginning</u> QAD's will be "Agents of RESNET"

### **New Provider Categories**

- "Direct" Providers
  - Do ratings in-house (and can also have "outside" Raters)
  - · QAD's are not employees of Provider
  - Provider will contract with third-party QA Contractor
- "Third-party" Providers
  - Do not do ratings in-house
  - 100% of their Raters are "outside" the Providership, third-party companies
- QAD's are employees of Provider
- · Business as usual, except... QAD's will be "agents of RESNET"



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New "QA Forum" Google Group, similar to REM Software Group Maximizing the use of "technology"

- Moving all QA data management to within the RESNET Registry
- Implementation of rating software input checks (per Board adopted consistency improvements from QI Software Working Group)
- Creating an ability for the RESNET Registry to check inputs
- Evaluate the feasibility of "remote" / "virtual" Quality Assurance
- Evaluating the ability of the RESNET Registry to serve as a QA and testing and inspection data gathering tool/database



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February 17, 2015

### IMPLEMENTATION OF THE NEW RESNET QA PROGRAM

### Amendments to RESNET Standards

- Standards Development Committee 900 to oversee amendment process
- First draft of amendments completed by end of March
- Vetting by Rating Industry (Raters, Providers, QAD's, RESNET Board) April
- Public comment period June (4 weeks)
- Amendments approved by Standards Management Board September
- Phase 1 Changes to QA Process (will apply to all QAD's)
   Effective date: January 1, 2016
- Phase 2 Changes to QA Delivery Effective date: January 1, 2017
- Update the RESNET "QA Process Document" to reflect changes to the QA process
- New round of Webinars for all QAD's December 2015



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### Amendments to RESNET Standards

- · Phase 1 Changes to QA Process
  - Fundamental changes to how RESNET does Quality Assurance
  - · How can we do better?
  - · Does 1% "Field QA" still make sense?
  - · Can a portion of Field QA be done "virtually"?
  - Can "File QA" be mostly or all an automated/electronic process?



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February 17, 2015

### IMPLEMENTATION OF THE NEW RESNET QA PROGRAM

### Amendments to RESNET Standards

- Phase 2 Changes to QA Delivery
  - Formalize "Direct" and "Third-Party" Provider categories
  - Different name than "Quality Assurance Designee"... "Quality Agent"?
  - QA's are <u>all the same</u>, whether working for Third-Party Providers or QA Contractors
  - Quality Assurance "scope of work" laid out in "QA Process Document"
  - · Minimum skill requirements, including a means for verifying
  - Certification process as "Agents" of RESNET



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### Amendments to RESNET Standards

- Phase 2 Changes to QA Delivery
  - Due process criteria which would lead to the revocation of QA's certification
  - Non-disclosure and conflicts of interest between QA Contractors and those receiving quality assurance services
  - Process for QA Contractor selection by Direct Providers, including the establishment of any limitations on who can be selected by Providers
  - Establish a means of compensation for independent QA Contractors, preferably market based
  - Establish a process of evaluating the work of QA's and holding them accountable for performing the QA "scope of work"



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February 17, 2015

### IMPLEMENTATION OF THE NEW RESNET QA PROGRAM

### Implementation of a "Pilot" QA Program

- Implementation for calendar year 2016
- GOAL: Work out the bugs in the new system in preparation for full implementation of the new QA program in January of 2017
- Participants
- Three (3) Third-Party Providers (one Quality Agent each)
- · Three (3) Direct Providers
- Three (3) QA Contractors (one Quality Agent each)
- Participant selection via RFP for Providers, RFQ for QA Contractors
  - RFP/RFQ released for response at beginning of August
  - RFP/RFQ due by end of August
- Pilot Providers and QA Contractors announced by end of September
- QA's to participate in Pilot Training in November of 2015

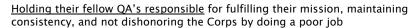


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### Establish a Corps of Quality Agents for RESNET

- An elite group of trained, skilled, knowledgeable individuals working on behalf of RESNET and the Rating Industry
- Selection to Corps: Pass Exam → Application → Attend/Pass 2 Day Training
- · QA's are mentors, trainers, educators
  - New RESNET QA will focus as much on Education as Verification
- "Go to" individuals for help and assistance with RESNET questions
  - QA's will be held responsible for ensuring that Providers and Raters not only receive information, but "understand" what they've received
- · "Keepers of the trust", Soldiers of "consistency"
  - · A chain is only as strong as it's weakest link...

Holding not only Providers and Raters accountable for knowing their responsibilities and following through on them, BUT





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February 17, 2015

### IMPLEMENTATION OF THE NEW RESNET QA PROGRAM

### Training and certifying QA's to be Agents of RESNET

- Revised QA Exam
- NOT a repeat of the material tested by the RESNET Rater Exam
- Exam content
  - Knowledge of the RESNET Standards and other important documents (not memorization, but where and how to find answers to questions)
- The latest QA Process Document
- Understanding of RESNET and how it operates
- New online exam ready after 2016 RESNET Conference
- In-person "Top Gun" training for QA Corps



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### "Top Gun" training for QA Corps

- All QA's are required to participate to be certified by RESNET
- Pilot training for first six (6) QA's will be in November 2015
- Two regular trainings will be held in September 2016
- · Regular bi-annual trainings starting in 2017
- One day of "Classroom" + One day of "Field Trials"
- Training is designed to:
  - Push QA's hard mentally to determine actual skill set, competence, and ability to think (may include peer evaluations)
  - Assess knowledge of building science, testing equipment, ethics, ability to teach and communicate, and more...
- · Create a new RESNET QA culture
- May replace "minimum number of ratings" requirement
- NOT just hoops to jump through, NO rubber stamps...
   All aspiring QA's may not make the cut!



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