

Comments and Proposed Edits to Staff Proposal for Additional Oversight when Errors are Discovered from a Quality Assurance Review

Brad Lowe, EarthCraft Virginia

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Comment [BL1]: Would like to see this.

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended.

Other Comments/Thoughts

*-This seems like it would be difficult for a low volume raters to ever get back in good standing.
-This would add a ton of cost for the numerous field visits. Perhaps some of those field visits could eventually be supplemented with online simulations (not all just some).
-Individual providers may have their own policies about this, but RESNET could also consider adding a QA Oversight Policy when the rater fails to schedule their annual QA. The policies listed above will not be able to be implemented if they fail to schedule the annual QA in a timely manner (which can be better defined in a policy). Also, it would give providers more direct and enforceable language from RESNET much like what is outlined above.*

Robert DuTeau, Kansas Building Science Institute

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. *"Errors in files represent errors in the field". This is **not true**. Errors in building files most often occur because a rater begins with a software file from previous rating and fails to fully customize the software file inputs to agree with the field data for the current rating.* In many respects the building file should be seen as the "canary in the coal mine" that can point to problems in the field.

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors that results in a 3% +/- or more variation in the HERS Index Score **The HERS index in REM/Rate is very sensitive to many inputs. For example, changing the number of stories above grade, or changing the appliance inputs will often change the HERS index by more than 3%.**

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

When in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD. **As mentioned above, small “clerical-procedural” errors in inputs can easily produce a change in the HERS index of greater than 3%. If providers are generating the software file, rather than raters, the errors will never be identified. If a productive and valued rater makes an error that generates a variation greater than 3%, the provider will be hesitant to acknowledge the error and charge the rater for an additional field review.**

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended.

I understand the intent of this comment process is to produce recommendations to modify the RESNET standards to improve the accuracy and consistency of ratings.

I have not made any specific recommendations because I believe these proposed changes are based upon questionable assumptions and are directed toward the symptoms rather than addressing the causes for failures. I believe the proposed changes will increase costs without making significant progress toward the goals of the proposed changes.

RESNET would be wise to measure and quantify the inconsistencies, inaccuracies, and errors currently being generated in rating files before decisions are made that will potentially increase costs without mitigating the causes for the inaccuracies and inconsistencies in ratings.

I am the person who developed an Excel visual basic application for screening ratings for quality assurance. When I became a QAD and developed the software I discovered that a significant fraction of ratings have errors. Many errors can be attributed to a disorganized process with a lack of attention to detail when generating the software file.

There are a large number of potential actions that RESNET could take without changing the standards that would reduce the number of fraudulent ratings, mitigate risks, and improve the consistency and accuracy of ratings. I would be happy to explain in detail what can be done without changing the standards.

Srikanth Puttagunta, Steven Winter Associates, Inc.

● ~~Errors in properly documenting critical take offs~~ — ~~The following are what a rater must absolutely get right:~~

- ~~Envelope floor areas, type and insulation levels~~
- ~~Envelope ceiling areas, type and insulation levels~~
- ~~Foundation perimeter, type and insulation levels~~
- ~~Framed floor area, type and insulation levels~~
- ~~Window areas, type, orientation and overhang~~
- ~~Door areas, type and orientation~~
- ~~Heating and cooling system size, type, location, and efficiency~~
- ~~Water heating system size, type and location~~
- ~~Mechanical ventilation type, fan wattage and measured rate~~
- ~~Duct system location and leakage test results~~
- ~~Blower door test results~~

Comment [Author2]: We completely disagree. "Absolutely"? A small error in takeoffs rarely affects the score. While we typically do 100% file reviews and make raters make any corrections that are found in these critical take offs, they should not be disciplined unless they exceed the 2 index point threshold. Many of these can have slight variations between various people's interpretation. For example, takeoffs for complex framing configurations and roof assemblies may result in slight difference, but often have little to no effect on the HERS Index. Also performance testing results have been shown to vary from rater to rater depending on equipment and test conditions. While we make sure that the model has the same information as the rater has included on the data collection form, slight variations between a rater and QAD test result will often have no impact. We do not support this change, as every rater on the planet will be on probation.

Errors That Results in Less of a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Comment [Sri3]: Internally we require our raters to fix the issue, but if we had an external QAD, if it is within the variance allowance, you shouldn't have to correct the file. There is enough uncertainty in modeling that this is unwarranted.

Errors Discovered in the Critical Takeoffs

- ~~The rater is placed on administrative probation~~
- ~~A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error~~
- ~~As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review~~
- ~~As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review~~

Philip Fairey, Florida Solar Energy Center

RESNET Standard Requirements for Building File Quality Assurance Reviews

904.4.1.1 The QA Provider shall be responsible for an annual QA file review of ten percent (10%) of the annual total of homes for which Confirmed or Sampled Ratings were provided. When determining the number of homes to review, 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.

Comment [PF4]: Highly recommend that this section not be constructed in this manner with 10% of each rater's ratings. There are multiple reasons, including 1) it is difficult to impossible to predict in advance how many ratings a rater will perform over the course of the year; 2) it is often better and more advantageous to inspect much more than 10% of a brand new or consistently poor rater's ratings and much less than 10% of an experienced and highly accurate rater's ratings; 3) it is quite possible to automatically screen ratings using software to determine which raters' files need the greatest attention.

Please revert to old requirement of 10% of all ratings.

904.4.1.3.3 For of each Confirmed Rating, confirm that the values entered into the Rating Software for all Minimum Rated Features are supported by on-site inspection and test data;

- o Measured enclosure air leakage (Blower door test results)

File Review Errors and Field Review Errors That Results in Less than the allowed Variation in the HERS Index Score

If errors are discovered during a file quality assurance review, the rater shall be directed to correct the errors in the building file and resubmit to the QA Provider for evaluation prior to uploading the building file to the RESNET Building Registry.

- In the event one or more of the 2 follow-up field QA reviews results in a variation in HERS Index score outside the allowable limit, the subject Rater shall be placed on administrative probation until such time that the Rater has successfully completed an accredited Rater Training program and passed the national core test for Raters with a score of 85 or greater.
- In the case of administrative probation, the QA Provider shall
 - o In the event one or more of the 4 follow-up field QA reviews results in a variation in HERS Index score outside the allowable limit, the subject Rater shall be required to successfully complete an accredited Rater Training program and pass the national core test for Raters with a score of 85 or greater.
- In the case of disciplinary probation without cause, the QA Provider shall:
 - o In the event one or more of the 10 follow-up field QA reviews results in a variation in HERS Index score outside the allowable limit, the subject Rater shall be required to successfully complete an accredited Rater Training program and pass the national core test for Raters with a score of 85 or greater.
- In the case of disciplinary probation with cause, the QA Provider shall:
 - o Revoke the certification of the subject Rater
 - o Provide notice in the RESNET Building Registry Rater database that the certification of the rater has been revoked for cause.

~~• As terms of probation the rater shall have 20% or 20 (whichever is greater) of the rater's rated homes undergo a file quality assurance review~~

~~• As terms of probation the rater shall have 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review~~

~~If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If~~

Comment [PF5]: Who is to do this and how are they to do it?

Comment [TK6]: Since the File QA is a description of the confirmed building, a QA Designee cannot "confirm" the values entered in the Rating software for all minimum rated features unless it is actually field verified. That only occurs if this is a house that will eventually have a field QA as well. QADs can however, verify that the inputs are "reasonable". This statement also implies that all files are under 904.4.1.1 must also be field verified, supported by actual on-site field-verified test data

Comment [PF7]: The degree to which this list is comprehensive or critical is subject to question. I do not believe it is either necessary or beneficial. It will likely cause more issues than it will solve problems. Each and every home is unique and each actually has somewhat different "criticalities" all of which should be discernable by a skilled and qualified QAD.

Comment [TK8]: Add climate to the list. If you get this wrong then the HERS Index Score will definitely be wrong

Comment [TK9]: What is the remediation for a home that is now non-compliant with an EEP. This may be the difference between passing the EEP requirements and not. With EStar we must give the rater time to "revise and make necessary repairs to the existing problems" in order to meet the criteria.

Comment [TK10]: I would agree to additional training, but the RESNET Core Exam will not clear up the practical issue(s). I think that there needs to be "remedial training" as determined by the QAD based on specific errors to that rater.

Comment [PF11]: I agree with Tei on this matter.

Comment [TK12]: Same comment as previous regarding the QA's finding and working with the rater

Comment [TK13]: This is the time for a full on as you have indicated especially since the QA can't get through to the rater with specialized training in the area(s) the rater is deficit

Comment [TK14]: Need criteria for probation and appeal process

~~major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.~~

Rater Disciplinary Action

~~If a rater violates the terms of the probation the rater shall be suspended.~~

Comment [PF15]: Unnecessary provision. Standard should already cover this.

David J. Maschke, Integrity Home Energy Assessments

Errors Discovered in the Critical Takeoffs

- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error

Comment [D16]: So if a rater accidentally leaves out a window, he requires a field QA which will likely cost hundreds of dollars. This is NUTS!!!! You need to stop treating raters like infants in the name of accuracy.

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

Comment [D17]: Example: A very small home and the rater doesn't mark the Washing machine as Energy Star. That can create an 8% error by itself. Because of that, a rater should be subject to this??? You are trying to make one-size-fits-all punishment to replace actually having to think.

Robby Schwarz – Energy Logic

904.4.2.7 Confirm that HERS Index scores for each home reviewed in accordance with 904.4.2.5 be no more than three percent (3%) (+/-) variation in the HERS Index from the HERS Index result as determined by the QA Designee. When calculating the HERS Index point variance allowed for a given Index, round down to the nearest whole Index point, with the allowable variance never less than two (2) HERS Index points. (this is still confusing and it might be good to give an example in here to ensure that everyone is on the same page and understands thoroughly)

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. In many respects the building file should be seen as the “canary in the coal mine” that can point to problems in the field.

Comment [RS18]: This is not necessarily true as modeling and input errors can be different that assessment errors in the field

Comment [RS19]: Possibly but I think there can still be a difference between field and building modeling errors

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors that results in a 3% +/- or more variation in the HERS Index Score
- Errors in properly documenting critical take offs – The following are what a rater must absolutely get right:
 - Envelope floor areas, type and insulation levels
 - Envelope ceiling areas, type and insulation levels
 - Foundation perimeter, type and insulation levels
 - Framed floor area, type and insulation levels
 - Window areas, type, orientation and overhang (U-value and SHGC)
 - Door areas, type and orientation (R-Value)
 - Heating and cooling system size, type, location, and efficiency
 - Water heating system size, type and location, (.EF)
 - Mechanical ventilation type, fan wattage and measured rate
 - Duct system location, R-Value, and leakage test results
 - Blower door test results
 - Proper site location
 - Efficient Lighting bulb counts
 - # of bedrooms

Comment [RS20]: It seems like the RESNET standards is saying that up to a $\pm 3\%$ error is within reason but over a $\pm 3\%$ error is of concern. This seems to be saying that any error needs to be addressed. We will make mistakes but it seems like we should only be concentrating on the impactful ones

Comment [RS21]: Is this for Confirmed ratings only or for proposed ratings as well. I assume confirmed as those are loaded to the registry?

Comment [GP22]: While the type of insulation determines the R-value per inch and ultimately the insulation level, REM Rate does not ask for insulation type. Ultimately the focus should be on the insulation level unless we are going to require the software to mandate inputs of the insulation type.

Comment [GP23]: Should there be a tolerance of something like 3% on these takeoffs? For instance foundation perimeter of 100' would be allowed a +/- 3' tolerance? On the other hand equipment efficiency should be the exact data spec'ed on AHRI since there is more standardization.

Errors That Results in Less of than a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings. (not sure what this is saying? Review rating that have been fixed due to the normal file review?)

Comment [RS24]: If it is less than $\pm 3\%$ it seems like we do not need to address it or fix it. I feel RESNET has said this is within the allowable range of error. I think notification to the Rater is needed and acknowledgment from the Rater is needed but that is already in the standards. Why does it need to be corrected and re-uploaded?

Comment [RS25]: This is significant, costly, and will be difficult to manage. Is this saying that the Rater will now be placed on administrative probation of having errors that range from $\pm 3\%$. This seems punitive and could happen very often. Who is to say that the QAD is actually correct in their interpretation of how to model the house?

Errors Discovered in the Critical Takeoffs

- The rater is placed on administrative probation
- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Comment [TF26]: This is ridiculous!! And completely unmanageable.

If a rater makes an error entering the water heater, we need to field QA the home? That's likely not even possible.

Also – a ton of our raters are <100 ratings, so this would increase their required file QA to 15 files (from 5-10) and their field QA to 5 – or as much as 50-100%.

Comment [GP27]: A more realistic approach is to require revisions to the rating along with increased file QA on the issue at hand with spot checking the failed items on 15%. I think the field QA should be reserved for if a rater does not correct the issue moving forward and continues to make the same mistake.

... [1]

Errors That Results in a 3% to 5 % +/- Variation in the HERS Index Score

Errors Discovered in File Reviews

When in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD.

Comment [RS28]: The home that has an error or other homes. May be very difficult to get back into the home that has errors as that home may have been completed long ago. Are we concerned with the $\pm 3\%$ or just the +3% here?

Errors Discovered in ~~Field-File~~ or Field Reviews

- The rater is placed on administrative probation
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Comment [GP29]: Redundant with intro paragraph for this section

Comment [RS30]: Again - This is significant, costly, and will be difficult to manage

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- As terms of probation the rater shall have 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Comment [RS31]: Once again - This is significant, costly, and will be difficult to manage

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Comment [RS32]: What is this?? More information needed

Comment [SB33]: This is Rob Moody's app.

Comment [GP34]: This seems more reasonable as the first step in corrective action rather than the last and if the issues aren't resolved with this action then additional field QA should be required with the rater on suspension. This is more likely to resolve issues without requiring field QA, with the additional field QA reserved for egregious offenders not those with an honest mistake or misunderstanding of the software.

Comment [SB35]: Agree. The way this is written, in theory, any rating that is not an exact, perfect replica from a QA perspective is "wrong" which is don't believe is the intent.

Robby – Seems to me that this is getting at how to more quickly get to a root cause analysis in order to make a major correction in how someone is doing their work. We need to have a range where accuracy is deemed to be within reason and therefore OK. I think we have that with the ± 3% or 2 HERS index points. This policy is now saying that there is a problem that needs to be fixed if we are within that range which I think is wrong. We should be concentrating on errors that are outside of the outlined range and how to fix those ratings and help that Rater who is having problems and or get them out of the industry if they can't change their ways. We have the polices to remove a Rater. We just need a better way to identify quickly if ratings are outside of the range. Right now it seems to me that increasing the frequency of file QA would be the answer and then going to something like what is outlined only when the errors are over the ± 3% range

Glenn- number of bedrooms, foundation types, number of stories, confusion on decimals and percentages, typos on areas (especially windows), accidentally duplicating inputs (slipped mouse click) not keeping up with the list of changes in versions, or simply being trained wrong are all common mistakes that honest people make all the time. I think every rater I've done file QA on has had a failure of 3% at some point which means every rater would be on probation in this model. Most all of them were able to correct the issue moving forward through the file QA process with a little bit of additional file QA and mentoring. No field QA required for common, but impactful mistakes unless the rater just doesn't get it corrected. I also think some of these should be error proofed by a software

program, but even then there are things that just wouldn't be caught by the software (like number of beds, number of stories, or poor training).

Emelie Cuppernell, Performance Systems Development

The RESNET Quality Improvement Quality Assurance Working Group did not have the time to develop a recommendation on this RESNET Board policy so RESNET staff has developed the following recommendations.

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. In many respects the building file should be seen as the "canary in the coal mine" that can point to problems in the field.

Errors Detected in Quality Assurance Reviews

There are two categories by which to evaluate errors in ratings:

- Errors that results in a 3% +/- or more variation in the HERS Index Score
- Errors in properly documenting critical take offs – The following are what a rater get right:
 - Envelope floor areas, type and insulation levels
 - Envelope ceiling areas, type and insulation levels
 - Foundation perimeter, type and insulation levels
 - Framed floor area, type and insulation levels
 - Window areas, type, orientation and overhang
 - Door areas, type and orientation
 - Heating and cooling system size, type, location, and efficiency
 - Water heating system size, type and location
 - Mechanical ventilation type, fan wattage and measured rate
 - Duct system location and leakage test results
 - Blower door test results

Errors That Results in Less than 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that do not affect the HERS Index Score by more than 3%, the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Comment [QAD Com36]: Possibly poll QAD to find most common errors found on QA? Then RESNET can put effort into training in this area

Comment [QAD Com37]: Maybe form another committee of industry professionals such as QAD's. This was obviously not written by someone that understands these issues

Comment [QAD Com38]: This is not always true, it could just be a modeling error, or a misunderstanding of how to use the software. I think I understand what this sentence is getting at, but it needs to be worded differently or just left out. Maybe "errors in building files can have just as significant an impact on HERS accuracy as errors in the field"

Comment [QAD Com39]: Is this on an item by item basis? Or a whole rating? For example a slight different in window, HVAC, and infiltration may not swing the index 3% individually but when combined they do.

Comment [QAD Com40]: Accurate, absolutely, and right need to be defined or given thresholds.

Comment [QAD Com41]: These are not all "take offs"

Comment [QAD Com42]: If errors in the following categories are going to be considered independently of their impact on the HERS Score, "right" needs to be defined and a tolerance assigned and all of this needs to be in the RESNET Standard. The current wording is vague and arbitrary.

Comment [QAD Com43]: Are these all listed in the standard as minimum rated features? If not, discipline would not be appropriate.

Comment [QAD Com44]: I think this is where the recommendation starts, but I am not sure. The document needs to be clear where background ends and the requirements begin

Comment [QAD Com45]: But the Rater needs to do this if the errors are greater than 3% as well right? So basically, any error, no matter how significant, the building needs to be re-uploaded?

Errors Discovered in the Critical Takeoffs

- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

When, in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD.

Errors Discovered in Field or Field Reviews

- The rater is placed on administrative probation

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- The rater is placed on disciplinary probation
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 20% or 20 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended.

Comment [QAD Com46]: How severe the errors – back to definition of right. This seems to apply regardless of the % variation in HERS Score, which would require a change in the Standard

Comment [QAD Com47]: This is ludicrous. As we read this it states that if one error is found on a critical take off then the Rater is placed on probation.

Comment [QAD Com48]: The RESNET Standard (Section 912.1.1 appears to apply administrative probation to a Provider, not to a Rater. Administrative Probation for a Rater would need to be defined in the Standard.

Comment [QAD Com49]: Not feasible, either the provider or the Rater will go out of business.

Comment [QAD Com50]: There is no distinction made between errors in the rating file and errors made in the field, but assigns a field remedy. This takes judgement out of the hands of the QAD. Any discipline, if any, and increas ... [2]

Comment [QAD Com51]: From the RESNET Quality Assurance Process (DRAFT), cur ... [3]

Comment [QAD Com52]: Maybe these happen after some threshold of errors is met? This all implies one error = this response.

Comment [QAD Com53]: Time delay makes this a problem, but >3% is pretty significant ... [4]

Comment [QAD Com54]: Again, this is ridiculous

Comment [QAD Com55]: Are these directed at the rater, field inspector or both?

Comment [QAD Com56]: There is a procedure that calls for FI and Rater QA to be "proportional" to the amount of work they ... [5]

Comment [QAD Com57]: This status also appears to be applied to Providers in the HERS Standard, not to raters. A new definition w ... [6]

Comment [QAD Com58]: Re is a sequence of severity if any Rating has problems. It states an additional number of Ratings gets reviewe ... [7]

Comment [QAD Com59]: Does this apply to the rater or FI or both?

Comment [QAD Com60]: Not sure what this is.

Comment [QAD Com61]: We like this idea!! not as a last resort, but early on in the process. This is useful and not as costly. ... [8]

Comment [QAD Com62]: What are the terms??

Comment [QAD Com63]: The QAD sets the terms as we read it in the Standard

Comment [QAD Com64]: Suspension is currently defined by RESNET in terms of the Provider and gives the provider the respon ... [9]

Ryan Moore, Green Insight, LLC

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors that results in a 3% +/- or more variation in the HERS Index Score

Comment [RM65]: Rounded up or down?

Errors That Results in Less of a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Comment [RM66]: Do you mean "affects the HERS index by less than 3% +/-"?

Errors Discovered in File or Field Reviews

- The rater is placed on administrative probation
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Comment [RM67]: What is an "Error discovered in field"?

Comment [RM68]: It's not clear whether you mean past ratings or future. If past, for current year only? (same for the bullet below this one)

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- The rater is placed on disciplinary probation

Comment [RM69]: Why is there no section for "Errors Discovered in File Reviews" here as above?

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended.

Comment [RM70]: How does a Rater get unsuspended? How does it escalate to termination? Although this is probably going to be very rare, I think you have to allow for all possibilities.

Jenna Grygier, Southface Energy Institute

Errors Detected in Quality Assurance Reviews

- Errors in properly documenting critical take offs – The following are what a rater must absolutely get right:

Comment [LC71]: There needs to be contingency factors here, but I am not sure what they should be. For example, floor area must be within 10 square feet or 10%, whichever is less.

Errors That Result in Less of a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that do not affect the HERS Index Score the errors shall be noted and the rater shall be directed to

Comment [LC72]: Our edits imply the sum of the errors, not one error specifically that accounts to less than a 3% variation; RESNET should spell this out explicitly so it is not misunderstood.

correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Errors Discovered in the Critical Takeoffs

The second offense of an error in critical takeoffs resulting in less than a 3% variation in the HERS Index Score, should result in the following:

- The rater is placed on administrative probation
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 2% or 2 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Errors That Result in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

Errors Discovered in the Critical Takeoffs The second offense of an error in critical takeoffs resulting in a 3-5% variation in the HERS Index Score, should result in the following:

As terms of probation the rater shall have 3% or 3 (whichever is greater) of the rater's rated homes undergo a field quality assurance review. The Quality Assurance Designee must select at least one home which resulted in an error found during file review for the field quality assurance review.

Errors That Result in a Greater Than 5 %+/- Variation in the HERS Index Score The second offense of an error in critical takeoffs resulting in greater than 5% variation in the HERS Index Score, should result in the following:

As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review. The Quality Assurance Designee must select at least one home that resulted in an error found during file review for the field quality assurance review.

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Comment [JG73]: For 1st offense, raters should be given a chance to learn from the Provider and fix the file as needed-serving as an educational opportunity instead of a penalty.

Comment [LC74]: We have spelled out first and second offenses. Progressive probationary steps need to be clarified. For example: Should a third error be found, the Rater shall undergo the probationary actions related to second offense errors that resulted in 3-5% variation to the index. Again, a time period needs to be set for the window – e.g. is it more than 2 files with errors submitted at separate times (since those submitted together cannot be learned from) over the course of the Rater's entire tenure with that provider? Their tenure as a Rater overall? That year? Clear timelines are needed.

Comment [JG75]: How long is the rater on administrative probation? Is the increased review only during the probation period, until no more major errors are discovered?

Comment [JG76]: This is really harsh for an error that results in less than a 3% HERS index variation. Strike it.

Comment [LC77]: Builds on your previous question – for what time period and for what minimum number of homes? E.g. for one quarter but the rater has no ratings that quarter...

Comment [JG78]: 5% is harsh, I think an increase from 1% to 2% would be acceptable and serve the intended purpose of "increased review" after the first offense. For your average rater, this would already double the previous rate of QA.

Comment [JG79]: Should be consistent with structure above

Comment [JG80]: Same justification as above point. Jumping from 1% to 5% QA is a huge leap

Comment [JG81]: This increased price of QA for the rater (even if it's just one more QA a year) will be enough incentive, for raters to get their act together.

I think the penalty needs to be one or the other: either field quality assurance on every home with an error OR 5% field review. In my opinion, there is not much value to field reviewing a home, in which an error has already been discovered (rater would have already fixed the error before uploading to the Registry and before QAD field reviewed the home). It's more valuable to catch the error during file review, and then use different homes for the field review, in order to touch more homes.

Comment [JG82]: I'm suggesting this as an alternative to bullet point #2 struck above

Comment [JG83]: Same justification as above

Comment [LC84]: I think this should happen at the first offense that results in >5% discrepancy

Additional notes:

I am not in disagreement that file errors point to problems in the field. I am just concerned with the rate at which field QA would be increased, following this presented plan. This plan would undoubtedly (at least) double the amount of field QA required for each rater, and sometimes even increase by a factor of 5 for larger volume raters. Previously, 3% variation from the HERS index score was considered acceptable in the realm of quality assurance. Requiring an increased rate of QA for a previously accepted 3% variation, is a huge leap of change. This is my personal viewpoint from a QAD perspective. Perhaps RESNET should require QAD's to perform 10% File QA on a home before it is uploaded to the RESNET registry (do a full review of every 10th file sent in). This way, the file would be corrected before it is uploaded into the Registry, thus preventing a need for a mandatory field QA on that home. After ___# of offenses, then the rater should be placed on probation and undergo a higher rate of field QA.

Jenna Grygier

Jonathan Coulter, Advanced Energy

The RESNET Quality Improvement Quality Assurance Working Group did not have the time to develop a recommendation on this RESNET Board policy so RESNET staff has developed the following recommendations.

RESNET Standard Requirements for Building File Quality Assurance Reviews

904.4.1.1 For each Rater, the Provider's QA Designee shall be responsible for a minimum 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 Ratings were provided.**

904.4.2.1 For each Rater, the Provider's QA Designee shall be responsible for an annual onsite QA field review of the minimum of the greater of one (1) home or one percent (1%) of the Rater's annual total of homes for which confirmed or sampled ratings and diagnostic testing services were provided. When determining the number of QA field reviews to complete for a Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 homes x 1% = 1.01 means that 2 QA field reviews shall be completed.

Comment [JC85]: Advanced Energy appreciates the opportunity to review and comment on RESNET Staff recommendation, but we highly encourage RESNET to also allow time and space for the RESNET Quality Improvement Quality Assurance Working Group to develop and provide an open comment period for their recommendations.

Comment [JC86]: How is this tracked? What format is RESNET collecting this data in?

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. In many respects the building file should be seen as the “canary in the coal mine” that can point to problems in the field.

Comment [JC87]: Agreed, but not every building file in the registry has been subject to the QA review process.

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

Comment [JC88]: Unsure on why “two” are mentioned here as the 3% (904.4.2.7 above) is the quantitative acceptable range for accurate documentation (904.4.2.5 above).?

Errors That Results in Less of a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Comment [JC89]: This statement appears to be in direct conflict with 904.4.2.7.1

Should we do away with the 3% number if any erroneous file will need correcting?

Errors Discovered in the Critical Takeoffs

- The rater is placed on administrative probation
- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error

Comment [JC90]: For how long?

Comment [JC91]: What’s the difference between this bullet and the same bullet below?

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in Field or Field Reviews

- The rater is placed on administrative probation

Comment [JC92]: For how long?

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Comment [JC93]: Where is this? Does this exist?

Comment [JC94]: What constitutes a “major error” versus a “minor error”? According to the above proposals, it appears that any error would lead to a proposed 100% file review.?

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended.

Comment [JC95]: By whom? RESNET? The QA Provider?

Sharla Riead, Accurate Rater Network

That the ~~RENSET~~ RESNET quality assurance standards maintain the current requirement of annual quality assurance review of raters consisting of 1% field reviews and 10% building file reviews with provisions through modification to the standard to add additional oversight of HERS Raters when errors are found in these reviews

RESNET Standard Requirements for Building File Quality Assurance Reviews

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 home files shall be reviewed.

904.4.2.5 As part of the QA field review of confirmed ratings, the QA Designee shall ensure that the minimum rated features of a rating are independently confirmed (i.e. confirmation of geometric characteristics, inspection of minimum rated features, and completion of any necessary performance testing) to determine whether the rating and/or diagnostic testing were accurately completed by the Rater, and determine whether information was completely collected and reported as required in 303.1 of Chapter 3 these Standards. [note: standards numbering changes frequently, so just referring to the requirements in the standards will keep this information from becoming out of date or requiring additional maintenance.]

It is understood that new raters and raters who are performing ratings in climate zones or on construction practices with which they are not yet fully familiar may have a higher rate of errors in their building files. If the QAD is working with the rater, performing file reviews at a rate greater than 20% AND completing those reviews prior to submission of the rating file to the registry such that the registry files are accurate within the allowed variance as proven by normal field QA procedures, then the need for the use of probation and additional field QA should follow the Provider and QAD's normal processes. However, once the QAD has determined that the rater's work is consistently accurate enough to allow for a file review rate less than 20% prior to submission to the registry, then, at a minimum, the following additional oversight based on errors detected must be implemented.

- Errors in properly documenting critical take offs – The following are what minimum rated features that a rater must absolutely get right record accurately:
 - Envelope floor areas, type and insulation levels
 - Envelope ceiling areas, type and insulation levels
 - Foundation perimeter, type and insulation levels

- Framed floor area, type and insulation levels *[note: This is covered in the first bullet – duplicating it here is confusing.]*
- Envelope wall, rim and band areas, type and insulation levels
- Window and skylight areas, type, U-value, SHGC, orientation, shading and overhang
- Door areas, type, R-value and orientation, presence/absence of storm door
- Interior mass type, location, area and thickness, if applicable
- Heating and cooling system size, type, location, and efficiency, plus solar collector loop, type, area, storage volume, tilt and orientation, if applicable
- Water heating system size, type, and location, added insulation and efficiency, plus solar collector type, area, storage volume, tilt and orientation, if applicable
- Mechanical ventilation type, fan wattage and measured rate, plus recovery efficiencies, if applicable
- Duct system location, insulation and leakage test results
- Blower door/Air leakage test results
- Sunspace envelope, mass and common wall details, if applicable
- Photovoltaic system orientation, area, peak power, tilt and efficiency, if applicable *[note: I assume you want to list all minimum rated features here which is why I expanded the list.]*

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Errors That Results in Less of than a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended rating files.

Errors Discovered in the Critical Takeoffs

- The rater is placed on administrative probation
- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review *[note: This could be in conflict with the other error handling instructions and just complicates the issue. The QAD should be free to handle these types of errors found in the manner that best suits the situation. For example, inaccurate information may be due to something as simple as a typo in the rating file (SEER 150 instead of SEER 15) in which case the file must be corrected but a field QA would be excessive. Having the rater provide*

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photos of the name plates on the condenser and coil with a matched AHRI certificate and an updated file usually better fits a situation such as this and ensures the correct data was collected at the time of the original rating. Chronic errors here will result in variations in the HERS Index Score which are handled in the other error handling paragraphs.]

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

When in the course of ~~quality assurance review~~ the file quality assurance reviews for a rater, the QAD reveals errors that result in a HERS Index variation greater than or equal to 3% and less than or equal to 5%, the home must have a field quality assurance review by the QAD.

Errors Discovered in ~~Field-File~~ or Field Reviews which have been verified by Field Review

- The rater is placed on administrative probation
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error that results in a greater than 3% variation in the HERS Index.
- As terms of probation the rater shall have 15% or 15 (whichever ~~is~~ is greater) of the rater's rated homes undergo a file quality assurance review
- ~~As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review~~
- For low-volume raters who perform less than 25 ratings within one year, the rater shall have 100% of the rater's rated homes undergo a file quality assurance review and 5% or 2 (whichever is greater) of the rater's rated home undergo a field quality assurance review

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score which have been verified by Field Review

- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error that results in a greater than 3% variation in the HERS Index
- As terms of probation the rater shall have 20% or 20 (whichever ~~is~~ is greater) of the rater's rated homes undergo a file quality assurance review
- ~~As terms of probation the rater shall have 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review~~
- For low-volume raters who perform less than 25 ratings within one year, the rater shall have 100% of the rater's rated homes undergo a file quality assurance

review and 10% or 3 (whichever is greater) of the rater's rated home undergo a field quality assurance review

If additional major errors are discovered during the next file probation required quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them-the rater on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Eric Powell, Cornerstone Energy Conservation

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. In many respects the building file should be seen as the "canary in the coal mine" that can point to problems in the field.

- Errors in properly documenting critical take offs – The following are what a rater must absolutely get right:
 - Duct system location and leakage test results
 - Blower door test results

Errors That Results in Less of a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Errors Discovered in the Critical Takeoffs

- The rater is placed on administrative probation
- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review

Errors That Results in a 3% to 5 % +/- Variation in the HERS Index Score

Errors Discovered in File Reviews

Comment [PE96]: Not necessarily. A minor data entry error when trying to meet deadlines does not constitute a failure to collect the data accurately within some form of data collection method.

Comment [PE97]: "Absolutely" does this mean exactly the same as my calculations? Is there some threshold?

Comment [PE98]: The various equipment manufacturers have acknowledged certain margins of error based on different climactic conditions on two different given days which cannot be absolutely overcome by correction factors used in Chapter 8

Comment [PE99]: The various equipment manufacturers have acknowledged certain margins of error based on different climactic conditions on two different given days which cannot be absolutely overcome by correction factors used in Chapter 8

Comment [PE100]: Again, "minor errors". Do we have some leeway here or must it be "absolutely" correct as mentioned above?

Comment [PE101]: Didn't we just come up with policy which placed a rater on probation if 4 or more files EXCEEDED the 3% threshold? Now, it's one strike, you're on probation.

Comment [PE102]: So if a rater does 16 ratings in a year and makes a "Critical error" on the first one, then that rater will by default have to have all 16 of his/her ratings subjected to file review?

When in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD.

Errors Discovered in Field or Field Reviews

- The rater is placed on administrative probation
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error
- As terms of probation the rater shall have 15% or 15 (whichever in greater) of the rater's rated homes undergo a file quality assurance review

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- The rater is placed on disciplinary probation
- As terms of probation the rater shall have 20% or 20 (whichever in greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended.

Michael A. Browne, Advanced Building Analysis, LLC

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors in properly documenting critical take offs – The following ~~are what a rater must absolutely get right::~~ must be accurate within a limit of +or -xx%

Errors That Results in Less of a 3% +/- or More Variation in the HERS Index Score

Comment [PE103]: Again, only 1 mistake allowed before you are placed on probation? That's how this reads.

Comment [PE104]: OK, so for every home I discover to have a HERS Index difference in excess of 3%, I must get in that home for field review? Better hope we have some cooperative homeowners or QA providers are going to have to report a lot of non-compliance to RESNET.

Comment [PE105]: See comment above related to this 15%.

Comment [PE106]: I've had this happen because I rater did a pre-construction building file with a partial basement/crawl space which was modified to a full basement by the time construction was underway. Rater missed this (agree, it's the rater's fault) when finalizing the rating file. This one significant oversight places them on disciplinary probation? With all due respect, that is overkill.

Comment [PE107]: See comment above related to the 15% but this 20% just makes it even worse.

Comment [PE108]: This is just impractical. So a rater does 200 jobs. I have already completed 2 field reviews and am in compliance but due to a finding which causes the HERS index to exceed 5%, I now need to find 18 more to meet the 20% field monitoring threshold? Again, this is poorly thought out and impractical.

Comment [PE109]: Uh, no, I would rather suspend or revoke this hypothetical rater than go through this process.

Comment [PE110]: See comment above. My response would be to tailor my certification thresholds to terminate any low-volume rater from our providership as I will not go through all of this trouble for a rater bringing in enough income to the providership to justify putting up with this.

Final summary comment. This policy appears to be thrown together with little thought to how practically it can be implemented. For providers who have built the cost of QA into their per-rating fee, there is no way to recoup the increased workload and tracking. In reality, the only entity who has to do any additional work under the disciplinary policies outline here is the QAD. The rater still does his/her ratings but the QAD has to review many more with up to 100% file review happening in practice on some low-volume raters. Please discard this whole policy and begin to consult a MAJORITY of the QA community for good recommendations instead of putting out harsh policies that the persons making the policy do not have to bear the burden of implementing.

Comment [MAB111]: +must absolutely get right implies that there is a perfect value for each of these when we all know that there is always an acceptable degree of error. This statement is useless as is, and will only make people panic about how precise results must be. This needs to be better defined.

If minor errors are discovered during a file or field quality assurance review that does not affect the HERS Index Score the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings.

Errors Discovered in the Critical Takeoffs

- ~~The rater is placed on administrative probation~~
- ~~A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error~~
- As terms of probation the rater shall have ~~15% or 15 (whichever is greater) of the rater's rated homes~~ the next 2 homes submitted to the Registry undergo a file quality assurance review. These 2 homes will not count toward the normal 10% QA review.
- ~~As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review~~

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

When in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD.

Errors Discovered in ~~Field or~~ Field Reviews

- The rater is placed on administrative probation
- A field quality assurance must be completed by the Quality Assurance Designee ~~on every home with an error~~ for the next home being completed for a confirmed Rating
- As terms of probation the rater shall have the next 3 homes submitted to the Registry undergo a file quality assurance review. These 3 homes will not count toward the normal 10% QA review. ~~15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review~~
- ~~As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review~~

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- The rater is placed on administrative disciplinary probation

Comment [MAB112]: This type of error has always required just a notification of the problem and a resolution worked out between QAD and Rater. The requirement to make revisions on a reasonably accurate Rating and resubmit them to the registry will create an undue amount of extra work for everyone and pointlessly drive up the cost of QA and Ratings.

Comment [MAB113]: This is excessive and will greatly increase the cost of QA and Ratings. It is extremely important that there be an acceptable range of error in any evaluation or measurement and this doesn't seem to allow for any.

Comment [MAB114]: Again this is increasing the current requirement for QA and will drive up costs of QA and Ratings, and make Ratings more cumbersome to deliver. Some errors are simple and clear and can be easily fixed without need for a field review. The need for a field review should be left up to the QAD.

Comment [MAB115]: Again I feel this is an excessive increase in the amount of QA and it doesn't clarify how long the administrative probation would last.

- A field quality assurance must be completed by the Quality Assurance Designee on every home with ~~an~~ 5 %+/- Variation errors found by either File or Field review.
- ~~As terms of probation the rater shall have the next 5 homes submitted to the Registry undergo a file quality assurance review. These 5 homes will not count toward the normal 10% QA file review. As terms of probation the rater shall have 20% or 20 (whichever in greater) of the rater's rated homes undergo a file quality assurance review~~
- As terms of probation the rater shall have the next home submitted to the Registry undergo a field quality assurance review. This home will not count toward the normal 1% QA Field review. 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a ~~two (2)~~ hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Josh Heller, Residential Science Resources

- Errors in properly documenting critical take offs – The following are what a rater must absolutely get right:
 - Water heating system size, type, and location, and efficiency.
 - Blower door test results

⇒ Comment: What is the definition of "must absolutely get right"? If a rater calculates the house as 5121 sq. ft., and the QA calculates it as 5130 sq. ft., does that equal an error? How about Blower door tests results? If the rater measures 930 CFM 50 and the QA measures 941, does that equal an error?

Errors Discovered in the Critical Takeoffs

- As terms of probation the rater shall have 15% or 15 (whichever in greater) of the rater's rated homes undergo a file quality assurance review
- Comment: What time period does the 15% apply to? The current year? The following year? What if a Rater only did 12 homes? This comment is applicable to many of the following bullet points.

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

Comment [MAB116]: At that point A QA could have put in a lot more than 2 hours trying to help the Rater, and another 2 hours probably wouldn't do much. I think the length of this probationary Training should be up to the QAD.

Comment [MAB117]: What is this tool? We have our own online Data collection forms that we have developed. Our forms include GPS location, Photos and many built in directories of equipment, testing calculations, lighting counts and more. It also includes data points required for MA Code and Rebate programs. I doubt the RESNET tool will have all of this and I don't think we should be required to use this if we have a better tool for the Rating work in our state.

Comment [JH118]: So, for the file review, there is a ZERO TOLERANCE policy for errors? Please define "absolutely get right"

Comment [JH119]: How does "absolutely right" apply to blower door and duct leakage testing??

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When in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD.

Comment: It may be impossible to get into a home to do a field QA review.

General Questions:

- Is there a minimum time period a Rater is on probation or suspension?
- What is the process for getting off of probation or suspension?

C.T. Loyd, Texas HERO

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors in properly documenting critical take offs – The following are what a rater must **absolutely** get right::

Errors That Results in Less of than a 3% +/- or More Variation in the HERS Index Score

Errors Discovered in the Critical Takeoffs

- The rater is placed on **administrative** probation

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- The rater is placed on **disciplinary** probation
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an **error**

Chris McTaggart , Building Efficiency Resources

I am writing to express my perspectives on recent efforts by yourself and the rest of RESNET Staff to improve the quality assurance oversight of the HERS industry. I appreciate the effort that you and your staff are making in attempting to improve QA

Comment [JH120]: This could get very expensive for a rater who is using a provider that must travel to do QA. Is a rater expected to fly in a QAD from out of state every time an error of 3% is found? This would make out of state providing not practical and would also drive up the cost of ratings.

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Comment [CL121]: We would argue that there is no absolute right in construction, engineering and science. Only tolerances or margins of error. We recommend that this language reflect tolerances or margins of error.

Comment [CL122]: This title is confusing and most likely wrong. Strike the "or More Variation"

Comment [CL123]: This section is not clear. We am assuming that it falls under the <3% variation in HERS index score. All humans make mistakes that are not intentional in nature and there are differences in interpreting plans. We don't believe a penalty is warranted in this situation nor is threshold for penalty clearly identified.

Instead, we would recommend that that the wording change to reflect something to the effect that: (1) the rater is made aware of the error(s) and directed to correct it in all affected files and re-uploaded; (2) the next, say 3, ratings are checked for the particular error in the critical takeoffs; (3) If the error persists then the rater is consciously at fault and administrative probation is warranted.

As to the terms of probation for this level of problem, the period of (or means of ending) ... [10]

Comment [CTL124]: Please define Administrative vs. Disciplinary probation, including the ramifications for both.

Comment [CL125]: We would argue again that it is still possible that this is a simple mistake and not an intentional attempt to load the HERS index. If it is an unintentional error, then this response is an undue burden on everyone concerned. ... [11]

Comment [CL126]: We know this is a huge error – but – it still could be an isolated unintentional mistake. Immediate administrative probation is probably warranted as in the recommendations above with an ongoing determination of whether to place the rat ... [12]

Comment [CTL127]: Please define Administrative vs. Disciplinary probation, including the ramifications for both.

Comment [CL128]: This implies 100% file QA review. Guidelines would be better. For example, sample X% of the files to gain further knowledge of the source of the error, then document the results and recommend Y number of homes be field QA'd.

standards and issue recommendations for how to handle consistency in the industry. I recognize that for you and your staff, it must be frustrating at times attempting to make efforts to improve this aspect of our industry and to receive substantial amounts of push-back and criticism.

Despite this critical feedback, I genuinely wish to encourage you and your staff in continuing to strive to make improvements to the QA standards of our industry. Indeed, ultimately I believe if RESNET has an opportunity to truly revolutionize the residential new construction industry, it is in setting standards for quality assurance of energy ratings of homes. Therefore, I appreciate the focus that you and your staff have put on improving QA across the board.

Although I appreciate what I perceive as a the positive and proactive intent of your staff in assembling the attached recommendations for additional measures that should take place if errors are found in QA reviews, I am concerned in how this document was put together. From what I understand, RESNET had intended for the QI-QA Working Group to work on this document, but due to time constraints this did not happen. Due to this, your staff put this document together to submit to the industry for review.

My concern with this approach is that although I believe your staff has the best intent in mind with what they have proposed, these recommendations lack a basis in the actual application of QA regulations within the industry as current. Many of the recommendations, if they were to become part of the QA standards, would drive most honest raters and providers out of the industry because they are significantly too stringent and burdensome. Additionally they do not address other critical issues of rating inconsistency that do not necessary change the HERS index.

What has been proposed in the document below simply is too big of a bite to chew, and it does not reflect the reality of how QA is performed. Despite this fact, I believe that the general direction of these recommendations is good, and I want to support your staff's efforts in beefing up QA requirements and obligations of providers. I just don't think what you have written is a good way at all of going about it.

Having spoken to many providers and QADs through this process of QA enhancement that RESNET has undertaken, the one overriding piece of feedback that I have gotten is that Providers and QADs would appreciate it if RESNET would engage them more directly for feedback on how to improve QA standards, versus issuing mandates from the top. QADs and Providers are the actors who have been implementing QA for RESNET for the past 10 years. We have the experience in exercising QA and performing it on a daily basis. Ultimately, we all have a great deal of knowledge and want to share this with RESNET to help improve the QA of the industry.

Please consider my suggestion to engage the Provider community to a greater extent in future recommendations for QA changes. I know Laurel is a great administrator, and Abe and Brett are both experienced professionals. However, your real constituency is a

much broader and larger base of professionals who also have a lot of value to add to the conversation.

Please see feedback below and feel free to contact me with any specific follow up. I know that RESNET and BER have had our disagreements in the last year about CAZ and some other issues, but ultimately I believe that both of our organizations have a common goal. I want to help support that goal and help RESNET improve in the most intelligent, productive manner possible. Please consider me an ally in this regard.

Introduction

The RESNET Quality Improvement Quality Assurance Working Group did not have the time to develop a recommendation on this RESNET Board policy so RESNET staff has developed the following recommendations. **I would recommend that you host a webinar and a polling session for QADs and Providers to gather input on the biggest QA issues they tend to see, and get feedback on how to handle failures in the most responsible manner possible.**

RESNET Standard Requirements for Field Quality Assurance Reviews

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. **This is not necessarily true; many errors in rating files are simply that... an error in data input into the software, caused either by sloppiness, misunderstanding of the software, or changes in the software itself that were previously unknown or announced.** All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. **I understand the point trying to be made here... if the Registry is to be viewed as the "living record" of all ratings and is supposed to be accurate, if there are inaccuracies in the rating, they will not properly depict the actual home and its features. Despite this, once again, it is not fair to say that a rating file error would necessarily indicate inappropriate, intentional rating misconduct in the field.** In many respects the building file should be seen as the "canary in the coal mine" that can point to problems in the field.

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors that results in a 3% +/- or more variation in the HERS Index Score **Is this referring to individual errors, or cumulative errors?**
- Errors in properly documenting critical take offs **Take offs generally refer to geometric area and volume calculations, not orientation, mechanical systems, etc. What you're referring to are defined in the Standards as "Minimum Rated Features"– The following are what a rater must absolutely get right:: Are you meaning to say that all of these have to be spot-on perfect? Meaning, within 1**

sqft for floor area, wall area, etc? There has to be a degree of tolerance for thresholds of accuracy, not absolutes. BER has actually set some of these tolerances internally based on our experience. I would be happy to share this with you if you are interested.

- o Slab's don't count?
- o Foundation walls don't count?
- o Above grade walls don't count?
- o Lights and appliances don't count?
- o Active solar/PV don't count?
- o Number of bedrooms, stories above grade, etc don't count?

See above. You need to define degrees of accuracy for all of these values, not absolute perfection. There's no such thing.

Errors That Results in Less of a 3% +/- or More Variation in the HERS Index Score

If minor errors are discovered during a file or field quality assurance review that do not affect the HERS Index Score by greater than +/- 3% the errors shall be noted and the rater shall be directed to correct the errors in the building file and submit to the Provider to upload into the RESNET Building Registry. The provider shall conduct a file quality assurance review on all of the amended ratings. What about files in which there are several errors that are significant, but they cause the HERS index to go up and down but ultimately do not deviate by more than 3% or 2 HERS index pts?

Also even more importantly... the current 10% File QA standards **do not** require that Providers adjust files and compare HERS index thresholds. That is required for 1% QA, but not 10% QA. Thus, these guidelines are not relevant to the current 10% QA standards. The current 10% QA standards simply require that a provider review a file for accuracy of input of minimum rated features, not a comparison on HERS index scores

Errors Discovered in the Critical Takeoffs Once again, what does this mean?

What kind of errors? Total wall area is off by 10 sqft? CFA is off by 30 sqft? The furnace is 95.5%, not 95%? You need to define thresholds of accuracy. Once again, we have done this internally and would be happy to share.

- The rater is placed on administrative probation First you need to define thresholds for accuracy... next you need to define how many errors would trigger this. Are you trying to say that an error in the input of minimum rated feature would trigger Probation? That is extremely unfair to a rater who may have simply made a mistake.
Also, I hope RESNET realizes that there can be additional levels of enhanced oversight of a raters work that doesn't entail placing them on Probation or Suspension. Just because people make mistakes doesn't mean they are necessarily bad or unfit raters.

- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error **This is entirely unreasonable. You have to define thresholds, number of variations, a level of enhanced oversight of a rater who may have made some errors that is office based prior to requiring a provider to jump straight to putting them on probation and doing field QA on that rating.**
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review **Is this the next series of ratings, or annually, or what?**
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review **Once again, this is not reasonable just because a rater makes one mistake in a rating. This is totally out of alignment with the reality of this industry. I hate to be a jerk, but seriously... this will not work.... Raters will quit... providers will quit or be entirely dishonest.**
- The rating industry is made up of more than tract development cardboard box homes in Arizona and Texas.... This is an evolving, complex industry and errors happen all of the time. This is why providers do QA, ideally prior to a rating being certified. If you really want to stop bad ratings from getting in the registry, force providers to do QA on the forefront and not the back end. That's what the BER does as well as several other providers. We do not enable print permissions until the file passes QA review. We review 100% of ratings for accuracy prior to enabling print permissions.

Errors That Results in a 3% to 5 %+/- Variation in the HERS Index Score

Errors Discovered in File Reviews

When in the course of quality assurance review the file quality assurance reviews for a rater reveals errors greater than 3%, the home must have a field quality assurance review by the QAD. **Once again, 10% QA standards do not require that a provider compare HERS indexes. You need to set different standards and targets if this is intended to be regarding 10% QA.**

Errors Discovered in Field or Field Reviews

- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review **This appears to be a repeat of the above. Once again, this is not the right approach. I appreciate what you're trying to do in creating more consistency in how Providers follow up on bad QAs, but this is not the right way.**

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- The rater is placed on disciplinary probation **Once again, 10% QA does not require comparing HERS indexes. It just requires that files be checked for consistency of inputs.**
- Regardless, changes happen during 10% QA that skew the HERS index by several points often that do not necessarily mean the rater was cheating... it could have been a "fat fingering" of inputs or simply a new type of building, assembly, or system that they had not previously modeled and they didn't get it right. We shouldn't be jumping into treating raters like criminals for making mistakes. We should be educating them and encouraging them to get better.
- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error **Once again, this is not realistic. Nobody will pay for this.**
- As terms of probation the rater shall have 20% or 20 (whichever is greater) of the rater's rated homes undergo a file quality assurance review **See above. You need to define these parameters more explicitly.**
- As terms of probation the rater shall have 10% or 10 (whichever is greater) of the rater's rated homes undergo a field quality assurance review **No provider can afford to do this, nor rater afford to pay for it. You're going to kill RESNET if you try to enforce this because a rater's HERS 50 rating was found to actually be a 47. I hope you realize that's what you're suggesting... that a 3 pt change in the index (>6% deviation) would trigger a rater to have this excessive level of oversight. That's crazy.**

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered **the QAD or delegate shall conduct a two (2) hour training session with the rater** using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered. **What is a RESNET rating field tablet tool? Rob Moody's yet-to-be developed RFI app? I think this is putting the cart before the horse, and what if the failures are related to sometime entirely different than what is covered in the app? There's no way Rob's app is going to cover everything.**

Regardless, the above highlighted is a good FIRST step if a provider documents ongoing consistency issues with a rater's work. This should be done PRIOR to putting them on probation. Probation, suspension, increased field QA, etc should be last resort measures, not first line defenses.

Rater Disciplinary Action

If a rater violates the terms of the probation the rater shall be suspended. **What terms? A rater is put on probation and has one rating that was submitted as a HERS 65, and**

instead it should have been a HERS 68, and now they are suspended and cannot do ratings anymore? This is extreme to say the least.

RESNET Staff... I appreciate what you're trying to accomplish here, but these recommendations are misguided and not in alignment with the reality of what QA is all about. Our industry needs to help poorly trained raters (you do realize that RESNET allows raters to be trained in 4 days, right?) get better, not put them in rater jail and force them to pay thousands of extra dollars.

Please engage the QAD/Provider community with some meetings/polls in order to get some better ideas on how to implement what you're trying to achieve. I don't mean to be offensive but I am concerned that you all are overworked and are trying to rush out policies without fully thinking them through. It is not necessary to do this; better to keep things the way they are and enforce people are doing them rather than add tons of extra work and bureaucracy without knowing the benefits/harm that it could cause.

Curtis O'Neal, MABTEC

This entire document needs to be thought out more before being put out for comment. While I agree that QA can be strengthened, I feel that the Field QA requirements in this document can put a cost burden on the Rater that is too great.

There are too many what ifs in the future of QA that have not been decided yet. This document is like putting the cart before the horse. If you are restoring a painting or document, you first get the overall plan and then start on the individual parts.

I have a question. Has anyone done any of these items to see a what if? A modified Gantt Chart or modified/simplified CPM or just a flow chart, with consequences on the different Big Picture QA that may come out of the Task Force.

I have made some comments and suggested corrections/changes on items below. But still feel that more thought, some simple research and other factors been "hashed" out before this document should have been put out, EVEN if was to make suggestions to the Task Force. Some items are moving slow (understanding the process) but others are moving too quickly.

Errors Discovered in the Critical Takeoffs

- The rater is placed on administrative probation
- A field quality assurance review must be completed by the Quality Assurance Designee on every home with an error that resulted in an error of 3% or more variance of the index
- As terms of probation the rater shall have 15% or 15 (whichever ~~is~~ is greater) of the rater's rated homes undergo a file quality assurance review

Comment [c129]: There are questions on how Field QA can be completed. What if this was a typo and not a calculation mistake? Consider revising text to be more concise.

- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

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Comment [c130]: Too stringent and possibly cost prohibitive until it is decided the who will be performing field QA. This can be modified at a later date.

Comment [c131]: There are questions on how Field QA can be completed. What if this was a typo and not a calculation mistake? Consider revising text to be more concise.

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Comment [c132]: Too stringent and possibly cost prohibitive until it is decided the who will be performing field QA. This can be modified at a later date. Reduce to 3% or 3.

Errors Discovered in Field or Field Reviews

- A field quality assurance must be completed by the Quality Assurance Designee on every home with an error that resulted in an error of 3% or more variance of the index
- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 53% or 3 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Comment [ag133]: **General Comment:** While I agree with the intent of this recommendation, the presented verbiage seems rushed and needs significant additional work before adoption should be considered. Without at a minimum, additional coordinated changes to the HERS registry these recommendations will not achieve their intended affect.

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

- As terms of probation the rater shall have 20% or 20 (whichever is greater) of the rater's rated homes undergo a file quality assurance review

Comment [ag134]: This statement reinforces my opinion of this recommendation as being rushed and needed additional development. While again I agree with the intent of the concepts presented additional development with the help of Raters and QADs is needed.

Paul Gay, US-EcoLogic

Introduction

The RESNET Quality Improvement Quality Assurance Working Group did not have the time to develop a recommendation on this RESNET Board policy so RESNET staff has developed the following recommendations

Comment [ag135]: If this is a true statement, then the first process change that needs to be implemented is the inclusion of all individuals who do the field verification in the HERS Registry. Under the current setup the energy modeler, who is often a distinct party from the person doing the field verification, carries all the responsibility as their name is the only one attached to the Home.

It must be kept in mind that there is little difference between errors in Rating Building Files and errors detected in field quality assurance reviews. All the ratings in the registry are confirmed ratings. Errors in the building files represent errors in the field. In many respects the building file should be seen as the "canary in the coal mine" that can point to problems in the field.

Comment [ag136]: This comment seems to run counter to "Worst Case" modeling procedures which are allowable within the HERS Standard. The same home model may have a window added or removed, or a door may change from a single to a double door configuration. If the worst case home uploaded has more windows or larger doors, or less overhang, or any other number of slight variation but presents a more conservation HERS Index than the actual home, and the Rating company implements this methodology intentionally and consistently, why should the modeling Rater face punitive action?

Errors Detected in Quality Assurance Reviews

There are two categories by which to judge errors in ratings:

- Errors that results in a 3% +/- or more variation in the HERS Index Score
- Errors in properly documenting critical take offs – The following are what a rater must absolutely get right:

Mechanical ventilation type, fan wattage and measured rate

Comment [ag137]: Are the fan wattage and measured rate of the Mechanical Ventilation system minimum rated features? If so RESNET needs to provide 1) clarification to this end and 2) additional guidance on default values and proper calculation methods. ENERGY STAR and EFL, among others, give different guidance on this. Should homes following th... [13]

Errors Discovered in the Critical Takeoffs

- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Errors Discovered in Field or Field Reviews

- As terms of probation the rater shall have 15% or 15 (whichever is greater) of the rater's rated homes undergo a file quality assurance review
- As terms of probation the rater shall have 5% or 5 (whichever is greater) of the rater's rated homes undergo a field quality assurance review

Errors That Results in a Greater Than 5 %+/- Variation in the HERS Index Score

If additional major errors are discovered during the next file quality assurance reviews the QAD or delegate shall review 100% of the next five (5) rating files submitted. If major errors continue to be discovered the QAD or delegate shall conduct a two (2) hour training session with the rater using the RESNET rating field tablet tool to mentor them on errors discovered and 100% of the rater's rating files will be reviewed until no major errors are discovered.

Comment [ag138]: If the Rater doing the modeling is not the same Rater doing the field verification, then the modeling rater should not be punished for errors made by the field verifier (whether they be RFI or Rater). Unless the modeling Rater were to inspect 100% of all the houses they model they would have no control over, and often not even be aware of errors made in the field by the person conducting the field verification. Tracking and applying probationary action in this fashion undermines accountability and consistency in the industry.

Comment [ag139]: Does the % increase only on the individual who made the mistake in the field or to all homes that the energy modeled listed in the HERS Registry uploads?

Comment [ag140]: Same concerns as above...persons doing the field verification and modeling should be tracked and QA separately. Tracking only the modeler creates the room for little to no oversight over RFIs and Field Raters.

Comment [ag141]: Must differentiate between field and modeling to reach the intended goal.

Comment [ag142]: When will this be tested and available? Or other on-site training methods allows or ONLY the this one?

A more realistic approach is to require revisions to the rating along with increased file QA on the issue at hand with spot checking the failed items on 15%. I think the field QA should be reserved for if a rater does not correct the issue moving forward and continues to make the same mistake.

The language of 5% or 5 whichever is greater (and even 15% or 15 for file QA) is well intended but not a great use of resources. Even a rater who does 1 rating a week (50 ratings a year which is common with us) would be put out of business with this model of requiring 5 field QA's.

All of the errors listed above can be verified much more efficiently with photo documentation which has been proven to work when we see significant failures. Maybe video QA should be considered if photos don't do the job if you wanted to take it a step further.

What if we required 100% file review for the next 15 ratings submitted. Wouldn't that be better than the random selection of what would be available for field QA in a snapshot of time whenever the QAD can carve out time for all the travels this would take? Even locally/internally, this would be a challenge.

There is no distinction made between errors in the rating file and errors made in the field, but assigns a field remedy. This takes judgement out of the hands of the QAD. Any discipline, if any, and increased QA review rates should be based on the party determined to be accountable by the QAD.

From the RESNET Quality Assurance Process (DRAFT), currently out for comment: iii.

904.4.3.3 *The Provider shall initiate appropriate disciplinary action on the Rater in accordance with the Provider's written Rater disciplinary procedures. It is the responsibility of the QA Designee to determine the necessity of disciplinary action, dependent on the severity of the discrepancy found in File Reviews. Disciplinary action may not be necessary in all instances.*

iv. **904.4.3.4** *Multiple instances of non-compliance with 904.4.3 shall, at a minimum, trigger an increased rate of file reviews or onsite inspections of homes and additional appropriate disciplinary action in accordance with the Provider's written Rater disciplinary*

904.4.3.3 *The Provider shall initiate appropriate disciplinary action on the Rater in accordance with the Provider's written Rater disciplinary procedures. It is the responsibility of the QA Designee*

Time delay makes this a problem, but >3% is pretty significant. What if the error is a typical file error that has a big impact. Might not need a field review.

There is a procedure that calls for FI and Rater QA to be "proportional" to the amount of work they perform. It would read it that this applies to both – or whomever is responsible for the error. I would think that the Rater would be included in any error that a FI made since the Rater is responsible for assuring the FI's work

This status also appears to be applied to Providers in the HERS Standard, not to raters. A new definition would be need to be added. Does this apply to the Rater or field inspector or both?

Page 9: [7] Comment [QAD Com58] NEHERS QAD Committee 10/1/2014 4:07:00 AM

Re is a sequence of severity if any Rating has problems. It states an additional number of Ratings gets reviewed, if there is a problem with any of those, additional units get reviewed until as many as 100% are reviewed. Suspension can occur if multiple errors are discovered.

Page 9: [8] Comment [QAD Com61] NEHERS QAD Committee 10/1/2014 4:07:00 AM

We like this idea!! not as a last resort, but early on in the process. This is useful and not as costly.

Page 9: [9] Comment [QAD Com64] NEHERS QAD Committee 10/1/2014 4:07:00 AM

Suspension is currently defined by RESNET in terms of the Provider and gives the provider the responsibility of defining disciplinary actions for its raters. This takes this away from the QAD and Provider.

Page 21: [10] Comment [CL123] C.T. Loyd 10/1/2014 6:31:00 PM

This section is not clear. We am assuming that it falls under the <3% variation in HERS index score. All humans make mistakes that are not intentional in nature and there are differences in interpreting plans. We don't believe a penalty is warranted in this situation nor is threshold for penalty clearly identified.

Instead, we would recommend that that the wording change to reflect something to the effect that: (1) the rater is made aware of the error(s) and directed to correct it in all affected files and re-uploaded; (2) the next, say 3, ratings are checked for the particular error in the critical takeoffs; (3) If the error persists then the rater is consciously at fault and administrative probation is warranted.

As to the terms of probation for this level of problem, the period of (or means of ending the) administrative probation and enhanced review needs to be identified.

Page 21: [11] Comment [CL125] C.T. Loyd 10/1/2014 6:31:00 PM

We would argue again that it is still possible that this is a simple mistake and not an intentional attempt to load the HERS index. If it is an unintentional error, then this response is an undue burden on everyone concerned.

Possible solution. Immediately file review 5 additional files and field review the home to determine if the error was intentional, gross negligence or an inability to perform at the professional level required. Instruct the rater to make the corrections and re-upload to registry. If negligent or incapable then put on administrative probation. If intentional, suspension is warranted.

Provide guidelines on the period of (or means of ending the) administrative probation.

Page 21: [12] Comment [CL126] C.T. Loyd 10/1/2014 6:32:00 PM

We know this is a huge error – but – it still could be an isolated unintentional mistake. Immediate administrative probation is probably warranted as in the recommendations above with an ongoing determination of whether to place the rater on disciplinary probation based on repeated errors/capability, intention to deceive or negligence.

If intention to deceive – then immediate suspension is warranted.

Page 28: [13] Comment [ag137] aaron gary 10/2/2014 4:54:00 AM

Are the fan wattage and measured rate of the Mechanical Ventilation system minimum rated features? If so RESNET needs to provide 1) clarification to this end and 2) additional guidance on default values and proper calculation methods. ENERGY STAR and EFL, among others, give different guidance on this. Should homes following these programs

use the program guidance of something else? What about other homes? If the selected calculation method is considered to be incorrect, are homes that use a calculation method that awards no credit for fan wattage of measured rate to the HERS Index treated the same as those that take lots of credit? If both are wrong, does a method that uses a conservative approach that improves the HERS index of a home by 0 points treated the same as one aggressively lowers the HERS index by 10 points? The HERS rating can be impacted by several points dependent on what guidance is followed leading to inconsistency in the HERS Index system.