**DRAFT PDS-01**

**Addendum 72, File and Field QA**

**904.3 Quality Assurance of HERS Raters and Ratings**

**904.3.1 Ratings included in QA File and QA Field reviews.**

904.3.1.1 For QA File and QA Field reviews, the HERS Rater's "annual total of ratings" shall mean all ratings entered into the National RESNET Registry (based on "date registered") for a calendar year, i.e. the twelve month period from January 1st through December 31st.

904.3.1.2 Ratings selected for QA File and QA Field review may be registered in the previous quarter but the annual total required is always based on the total number of ratings registered in a calendar year.

**904.3.2 HERS Rater Quality Assurance File review (QA File review)**

904.3.2.1 The Quality Assurance Designees shall evaluate the ratings selected for file QA review using the RESNET QA Review Checklist.  Ratings that receive a failing score on the RESNET QA Review Checklist are considered “Non-compliant” for purposes of disciplinary procedures described in Section 102.2.9.3

904.3.2.2~~1~~ QA File review of RESNET Flagged Files. Quality Assurance Designees shall review ratings with apparent errors flagged by the RESNET QA File review for further Quality Assurance review, investigating the specific issues of concern and working with the HERS Rater and Rating Quality Assurance Provider to correct any errors.

904.3.2.3 Providers shall calculate the number of file QA reviews required annually using one of the following methods:

904.3.2.~~2.2~~3.1 For each HERS Rater, the Provider's Quality Assurance Designee shall be responsible for an annual QA File review of the greater of one (1) rating or ten percent (10%) of the HERS Rater's annual total of Confirmed, Threshold or Sampled Ratings. When determining the number of ratings to review for a HERS Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 ratings x 10% = 10.1 means that 11 ratings shall be reviewed~~.~~ OR;

904.3.2.3.2 Based on the Provider’s combined rating count for all HERS Raters (total population), the Provider's Quality Assurance Designee shall be responsible for an annual QA File review of a statistically significant number of ratings sufficient to achieve a 95% confidence level in the results, as calculated by the RESNET National Buildings Registry[[1]](#footnote-2) (See below informative note 1). Ratings shall be selected for QA File review according to 904.3.2.7.1 AND the QAD shall ensure that a QA File review is completed on a minimum of one (1) rating on a completed home per year for each HERS Rater.

904.3.2.4~~3~~ Parties included in QA File review. The QA File review shall assess the rating as a whole. The Rater of Record is the responsible party for communicating with the Quality Assurance Designee, acknowledging the review, and ensuring any necessary corrections are made. Feedback shall be shared with all HERS Raters/RFIs/HERS Modelers participating in the rating.

904.3.2.5~~4~~ HERS Modelers. For HERS Raters utilizing HERS Modelers, the Quality Assurance Designee shall ensure that a QA File review is completed on a minimum of one (1) rating on a completed home per year. The HERS Modeler QA File reviews may fulfill all of the HERS Rater's annual QA File review requirement.

904.3.2.6~~5~~ QA File reviews shall be conducted on an ongoing basis as appropriate for the volume of ratings being completed and submitted to the National RESNET Registry, and at a minimum quarterly.

904.3.2.7~~6~~ The QA File review completed by a Quality Assurance Designee shall consist of, at a minimum, the following:

904.3.2.7~~6~~.1 Ratings shall be selected using a nonbiased selection process from the entire pool of ratings available at the time of the review[[2]](#footnote-3) ~~for each HERS Rater~~. It may be necessary to first select ratings that represent any particular area of concern ~~in either~~ such as the individuals participating in the rating, the rating itself, or the construction process. Once it is ensured that ratings from these areas of interest will be included in the quality assurance process, a nonbiased selection process can then be applied such as random selection. If ratings exist in the pool of available ratings which represent a RESNET supported credential beyond HERS Rater certification, such as ENERGY STAR or ANSI/RESNET/ACCA Standard 310 Inspections, a minimum of one rating representative of each supported certification shall also be included. (see below informative note 2~~1~~) Special effort should be taken to make certain that the selected ratings are as representative as possible of the ratings being completed, i.e. new and existing homes, geographic location, builder, trade contractor, variety of floor plans, etc., which, in some instances, may require more than the minimum ~~(1) rating or ten percent (10%)~~ calculated from one of the two methods described in 904.3.2.3.

904.3.2.7~~6~~.2 While Section 102.1.4.11 and 303.3.7 require that HERS Raters submit energy simulation files for every rated home to their Providers, the QA file review does not require that Raters submit quality assurance data files, as defined in Appendix B, to their Provider and/or Quality Assurance Designee for every home that is rated. Only quality assurance data files for the ratings selected for quality assurance shall be required to be submitted for review by the Provider's Quality Assurance Designee.

904.3.2.7~~6~~.3 For each Confirmed Rating, confirm that the values entered into the HERS Rating Software for all Minimum Rated Features are supported by actual on-site field-verified test data;

904.3.2.7~~6~~.3.1 At minimum, the Rating Provider shall collect, review, and maintain (for a period of 3 years) the following supporting documentation for each file QA:

Date and time of the inspection/test

The name of the Certified Rater or RFI conducting the inspection/test

Plans (or alternative documentation showing building dimensions)

RESNET Home Energy Rating Standard Disclosure

Photos of the following building features where applicable to the rated Dwelling Unit. Where photos lack sufficient detail[[3]](#footnote-4) (See below informative note 3~~2~~), the Quality Assurance Designee shall require additional supporting documentation.

a. Building assemblies as required by ANSI/RESNET 301 Appendix B Inspection Procedures for Minimum Rated Features.

b. All heating, cooling, and service hot water equipment including nameplate/model number

c. Dwelling Unit Mechanical Ventilation System including nameplate/model number and controls

d. Infiltration test result or automated test report

e. Duct leakage test result(s) for each system

f. Dwelling Unit Mechanical Ventilation System test result(s) for each system

g. The building's front, back, right, left elevations

h. Appliances (refrigerator, dishwasher, washer, dryer) including nameplate/model number

For File QA on a rating that includes an additional RESNET supported credential, collect, review, and maintain supporting documentation required by the RESNET-supported credential. This may include, but is not limited to the following:
EEP or Program Verification Forms/Checklists
Photographs of test results or automated test reports for program required verification tests.

904.3.2.7~~6~~.4 Confirm that paper and/or electronic files are being maintained and archived by HERS Raters for each rating and/or unique floor plan, including the HERS Rating Software Energy Simulation File and all supporting documentation required to validate the inputs into the rating software file (e.g., architectural drawings, threshold specifications, field data). These files shall be maintained a minimum of three (3) years;

904.3.2.8~~7~~ QA File review for Sampled Ratings. For Sampled Ratings, annually review sample sets, the sampling process, and the worst-case projected rating energy simulation files for ratings rated through sampling.

904.3.2.8~~7~~.1 The QA File review for sampled ratings shall include a review of the greater of one (1) file or ten percent (10%) of the projected worst-case energy simulation files for each new sampled community in order to confirm that minimum rated features and worst-case specifications have been entered into the rating software accurately. Energy simulation files for an existing sampled community shall receive a QA File review, at a rate of one (1) file or ten percent (10%) of the worst-case energy simulation files.

904.3.2.8~~7~~.2 The QA File review for sampled ratings shall include an analysis and confirmation that the sampling process, as defined in Chapter 6, is being properly followed, including sample set creation and the application of testing and failure protocols.

904.3.2.8~~7~~.2.1 QA File review of the sampling process shall be completed on the greater of one (1) sample set or one percent (1%) of the HERS Rater's annual total of sample sets. When determining the number of sample sets to review for a HERS Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 sample sets x 1% = 1.01 means that 2 sample sets shall be reviewed.

904.3.2.8~~7~~.2.2 For each sample set QA File review, the quality assurance data file(s) shall be reviewed to confirm that data collected in the field (i.e. sample controls) are equal to or better than the minimum rated feature threshold specification inputs for the worst-case energy simulation file for the home(s) that received sample controls for the sample set.

904.3.2.8~~7~~.2.3 If a discrepancy in minimum rated features is identified that requires more stringent threshold specifications for a floor plan, then the ~~worst case~~worst-case projected rating energy simulation file for that plan and home, or for the entire set of homes (as appropriate), subject to sampling shall be reviewed.

**904.3.3 HERS Rater Quality Assurance Field review (QA Field review).**

904.3.3.1 The Quality Assurance Designees shall evaluate the ratings selected for field QA review using the RESNET QA Review Checklist.  Ratings that receiving a failing score on the RESNET QA Review Checklist are considered “Non-compliant” for purposes of disciplinary procedures described in Section 102.2.9.3

904.3.3.~~1~~2 Determining the number of ratings to receive QA Field reviews.

904.3.3.2~~1~~.1 HERS Raters. For each HERS Rater, the Provider's Quality Assurance Designee shall be responsible for an annual onsite QA Field review of the greater of one (1) rating on a completed home or one percent (1%) of the HERS Rater's annual total of ratings for which Confirmed, Threshold or Sampled ratings were provided. When determining the number of QA Field reviews to complete for a HERS Rater, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 ratings x 1% = 1.01 means that 2 QA Field reviews shall be completed. Providers may use the following alternative method to determine the number of ratings to receive QA Field reviews:

904.3.3.2.1.1 Flexibility to choose which Raters to perform field QA on. Providers will be allowed to perform field QA based on 1% of their own Provider rating count, selecting the newer or lower performing Raters to receive more field QA reviews and higher performing Raters to receive less.

904.3.3.2.1.1.1 Backstop: All Raters would receive a minimum of one field QA review per year

904.3.3.2.1.1.2 Exception: Raters performing 100 or fewer ratings may be exempt from field QA in a given year if they meet all the following criteria:

a. They fall into the “high performing” category. Providers must evaluate the QA Review Checklists for the previous 12 months to determine the individual’s average score. The top performing 50% of Raters in the Providership are allowed to have lower than 1% field QA rates. Raters who fall into the category of “field only” for their QA reviews are evaluated with the RFIs; AND

b. They received at least one field QA review the previous calendar year; AND

c. During the year of the exemption, the Rater shall receive 100% or 15 full file QA reviews, whichever is less.

904.3.3.2~~1~~.2 Rating Field Inspectors. For HERS Raters utilizing RFI's, the Quality Assurance Designee shall ensure that a QA Field review is completed on the greater of one (1) rating on a completed home or one percent (1%) of each RFI's annual total of Confirmed, Threshold or Sampled ratings the RFI assisted with. When determining the number of QA Field reviews to complete for an RFI, round up to the next whole number when the percentage calculation yields a decimal point, e.g. 101 ratings x 1% = 1.01 means that 2 QA Field reviews shall be completed. The RFI QA Field reviews may fulfill all of the HERS Rater's annual QA Field review requirement, but only if the HERS Rater does not do field inspections on completed homes. When a HERS Rater also does field inspections on completed homes, they must have field QA at the same calculated rate of 1% using the above methodologies.

904.3.3.2.2.1 Flexibility to choose which RFIs to perform field QA on. Providers will be allowed to perform field QA based on 1% of their own Provider rating count, selecting the newer or lower performing RFIs to receive more field QA reviews and higher performing RFIs to receive less.

904.3.3.2.2.1.1 Backstop: All RFIs would receive a minimum of one field QA review per year

904.3.3.1.2.1.2 Exception: RFIs performing 100 or fewer final inspections OR pre-drywall inspections (whichever is higher) may be exempt from field QA in a given year if they meet the following criteria:

a. They fall into the “high performing” category. Providers must evaluate the QA Review Checklists for the previous 12 months to determine the individual’s average score. The top performing 50% of RFIs in the Providership are allowed to have lower than 1% field QA rates.

b. They received at least one field QA review the previous calendar year.

c. During the year of the exemption, the Rater(s) of Record associated with that year’s total field work of the eligible RFI shall receive 100% or 15 full file QA reviews, whichever is less.

904.3.3.2~~1~~.3 Pre-drywall QA Field reviews. QA Field reviews on new homes, the Quality Assurance Designee may perform one or more pre-drywall QA Field reviews on each HERS Rater or RFI. Pre-drywall QA Field reviews can be used to meet all or part of the annual 1% QA Field review requirement for a HERS Rater or RFI with the following limitation: Pre-Drywall Field QA Reviews may NOT be used to satisfy the full field QA requirement for a given rater or RFI in consecutive years.

904.3.3.2~~1~~.4 HERS Raters and RFIs are exempt from receiving a QA field review for pre-drywall or final inspections and/or testing if they have not performed inspections and/or testing of any minimum rated features for pre-drywall or completed homes within the calendar year. For example, if a HERS Rater or~~f~~ RFI ~~have~~ has not completed any pre-drywall inspections within the calendar year, they are exempt from QA Field reviews for pre-drywall inspections.

904.3.3.2~~1~~.5 "Remote" QA Field reviews. All HERS Raters must annually receive a minimum of one (1) on-site, in-person QA Field review on total annual Confirmed, Threshold or Sampled ratings completed. All RFIs must annually receive a minimum of one (1) on-site, in person QA field review on the total annual pre-drywall or final field inspections completed. All other QA Field reviews, for completed and pre-drywall homes, may be performed using a "remote" QA Field review methodology specified by RESNET.

904.3.3.2~~1~~.6 Sampled Ratings. For the purposes of calculating the one (1) rating/home or one percent (1%) QA Field review requirement for HERS Rater and RFI sampled ratings, all the homes rated by a HERS Rater, or for which an RFI assisted, using sampling shall be considered and not just the number of homes tested and inspected. If at least two (2) homes are required for QA Field review, a maximum of one (1) of the homes shall be a non-tested, sampled home. To ensure that Quality Assurance is being completed on HERS Raters and RFI's rather than builders, the balance of homes included in the QA Field reviews shall have received field testing and/or inspections.

904.3.3.2~~1~~.7 Quality Assurance Designees shall complete a minimum of 1% quarterly QA Field reviews of Rating Quality Assurance Provider's ratings, based on the total number of ratings registered by the Provider in the previous quarter, until all annual QA requirements for the Provider have been met for each Rater. QA field reviews are not required on every Rater every quarter.

904.3.3.3~~2~~ Requirements for QA Field reviews.

904.3.3.3~~2~~.1 HERS Raters. The QA Field review shall confirm the accuracy of all stages of the rating process (e.g. data collection, reporting, and energy simulation file creation and/or updating) for the rating receiving a QA Field review.

904.3.3.3~~2~~.1.1 Collect dimensional measurements in the field for the home to evaluate the accuracy of those determined by the HERS Rater in the field or from plans, including conformance to the requirements set forth in ANSI/RESNET/ICC Standard 301.

904.3.3.3~~2~~.1.2 Complete in the field all necessary performance testing and all necessary inspections of minimum rated features for the home to evaluate the accuracy of those determined by the HERS Rater, including conformance to the requirements set forth in ANSI/RESNET/ICC Standards 301 and 380 of these Standards. As applicable (see below informative note 3), complete all necessary performance testing and inspections as required by RESNET supported credentials beyond HERS Rater certification, such as ENERGY STAR or ANSI/RESNET/ACCA Standard 310 Inspections.

For Field QA on a rating that includes an additional RESNET supported credential, collect, review, and maintain supporting documentation required by the RESNET-supported credential. This may include, but is not limited to the following:

EEP or Program Verification Forms/Checklists
Photographs of test results or automated test reports for program required verification tests.

904.3.3.2.1.3 Evaluate inputs entered by the HERS Rater into the energy simulation file for the rated home to determine conformance with data from 904.3.3.2.1.1 and 904.3.3.2.1.2 as well as ANSI/RESNET/ICC Standard 301.

904.3.3.3~~2~~.2 Rating Field Inspectors. The QA Field review shall confirm the accuracy of data collection and reporting by the RFI for the rating receiving a QA Field review.

904.3.3.3~~2~~.2.1 As necessary, collect dimensional measurements in the field for the home to evaluate the accuracy of those that may have been determined by the RFI, including conformance to the requirements set forth in ANSI/RESNET/ICC Standard 301.

904.3.3.3~~2~~.2.2 Complete in the field all necessary performance testing and all necessary inspections of minimum rated features for the home to evaluate the accuracy of those that may have been determined by the RFI, including conformance to the requirements set forth in ANSI/RESNET/ICC Standards 301 and 380 of these Standards. As applicable[[4]](#footnote-5) (see below informative note 4~~3~~), complete all necessary performance testing and inspections as required by RESNET supported credentials beyond HERS Rater certification, such as ENERGY STAR or ANSI/RESNET/ACCA Standard 310 Inspections.

904.3.3.3~~2~~.3 Pre-drywall. For homes receiving a QA Field review prior to the installation of drywall, the QA shall complete in the field all necessary performance testing and all necessary inspections of minimum rated features for the home to evaluate the accuracy of those determined by the HERS Rater or RFI, including conformance to the requirements set forth in ANSI/RESNET/ICC Standard 301.

904.3.3.3~~2~~.4 Each rating selected for a QA Field review for each HERS Rater and RFI shall be randomly selected to ensure that a representative sample of all home types, locations and builders is achieved. If ratings exist in the pool of available ratings which represent RESNET supported credentials beyond HERS Rater certification, such as ENERGY STAR or ANSI/RESNET/ACCA Standard 310 Inspections, a minimum of one rating representative of each supported credential shall also be included.

904.3.3.2.5 Remote QA Field reviews. QA Field reviews not completed on-site, in-person by a Quality Assurance Designee, may be completed remotely using video technology and processes, protocols, and procedures approved by RESNET.

1. Informative Note 1 - The RESNET National Building Registry will calculate alternative file QA requirements as shown by the example calculator found on the RESNET website at: https://www.resnet.us/about/standards/minhers/tools. The sample size required for 95% confidence level using standard population proportion of .5 or 50%. [↑](#footnote-ref-2)
2. Informative Note ~~1~~ 2 – The pool is based per rater. If the rater does not require QA for the current quarter, then no additional QA is required. [↑](#footnote-ref-3)
3. Informative Note 3~~2~~ - For example, where equipment is located in narrow utility closets that prohibit clear photo of nameplate/model number, or when the building feature required is not present at the time of inspection. [↑](#footnote-ref-4)
4. Informative Note 4 - The features to be reviewed/performed during the QA visit are only required to be those that were originally performed as part of the rating. [↑](#footnote-ref-5)