

# Deficiencies in Modeler Submissions 2015 Standards

## Prepared by the Professional Team for the Florida Commission on Hurricane Loss Projection Methodology

December 13, 2016

The Professional Team held conference calls on December 5 & 6, 2016, to discuss the model submissions received by November 1, 2016, for review and determination of acceptability under the 2015 Standards. The following items are submitted to the Commission as potential deficiencies to be discussed at the December 13, 2016, Commission meeting. The Professional Team does not deem it necessary for any of the modeling organizations to submit Form S-6.

The Professional Team will issue a pre-visit letter with specific requests for material in addition to that given in the *Report of Activities*.

### **AIR Worldwide Corporation – AIR Hurricane Model for the U.S., V16.0.0, Touchstone® V4.1.0**

1. Standard G-1, Disclosure 5.C (pages 30-34)  
Response is non-responsive as the maps in Figures 4-8 do not comply with county boundaries as required in the disclosure.
2. Standard S-1, Disclosure 2 (pages 89-90)  
Response is non-responsive as the legends in Figures 17 & 18 do not follow the Acceptability Process II.A.5.j requirements (page 49) in the *Report of Activities*.
3. Standard V-1, Disclosure 8 (pages 123-124)  
Response is incomplete as a description of the relationship between structural and appurtenant structure vulnerability functions and consistency with insurance claims data are not given.
4. Standard V-2, Disclosure 4 (page 134)  
Response is incomplete as the total number of contents vulnerability functions is not given.
5. Standard V-3.A (page 138)  
Response is incomplete as the impact of mitigation measures on associated uncertainties is not given.
6. Form A-1.C (page 274)  
Response is incomplete as Form A-1 was not provided in PDF format.
7. Form A-8 (page 370)  
Response is deficient as the axes are problematic in Figure 97.

## **Applied Research Associates, Inc. – HurLoss Florida Model Version 8.0.a**

1. Standard G-1, Disclosure 4 (Pages 137-142)  
Response is incomplete as Florida Building Code references are not included in the vulnerability references.
2. Standard G-1, Disclosure 5 (page 31)  
Comparisons in the submission are to be between the current submitted Version 8.0.a and the currently accepted model Version 7.0.b.
3. Standard G-2, Disclosure 3.B (page 47)  
Response is incomplete as documentation of the independent actuarial review is not given.
4. Form G-5 (page 150)  
Response is non-responsive as the model version does not correspond to the current submission being reviewed.
5. Standard M-2 (page 58)  
Response is unclear as the year ranges for SST and  $T_0$  are inconsistent with the response to Standard G-1, Disclosure 5.
6. Form M-1.E (page 154)  
Response is non-responsive as the list of storms does not reflect changes relevant to Florida in HURDAT2 since the previously accepted model version.
7. Form M-2 (pages 160-164)  
Response is non-responsive as contour plots are not given in Figures 33, 34, and 35.
8. Standard S-1, Disclosure 1 (page 76)  
Response is incomplete as statistical techniques used for estimation and specific goodness-of-fit tests applied along with corresponding  $p$ -values are not given.
9. Standard S-1, Disclosure 4 (page 77)  
Response is incomplete as assessment of uncertainty in probable maximum loss levels is not given.
10. Standard S-5, Disclosure 1 (page 86)  
Response is incomplete as the loss projections generated for personal and commercial residential losses are not given separately.
11. Standard V-1, Disclosure 4 (page 92)  
Response is incomplete as a description of assumptions is not given.
12. Standard V-1, Disclosure 8 (page 94)  
Response is incomplete as a description of the relationship between structural and appurtenant structure vulnerability functions and consistency with insurance claims data are not given.

Applied Research Associates, Inc. – HurLoss Florida Model Version 8.0.a (continued)

13. Standard V-1, Disclosure 9 (page 94)  
Response is incomplete as assumptions, data, methods, and processes relating to when some building characteristics are unknown are not given.
14. Standard V-3.A (page 102)  
Response is incomplete as the impact of mitigation measures on associated uncertainties is not given.
15. Standard A-1, Disclosure 1 (page 104)  
Response is incomplete as a sample calculation for determining the property value is not given.
16. Standard A-1, Disclosure 2 (page 105)  
Response is incomplete as a sample calculation for determining the amount of depreciation and the actual cash value losses is not given.
17. Standard A-1, Disclosure 5 (page 105)  
Response is incomplete as a copy of the input form is not given.
18. Form A-8 (pages 302-303)  
Response is unclear as most of the conditional tail expectation values are less than the estimated loss levels.

**CoreLogic, Inc. – CoreLogic Florida Hurricane Model 2017, Risk Quantification and Engineering**

1. Standard G-1, Disclosure 5.A.3 (page 31)  
Response is non-responsive as rationale for the structure type assignments update is not given.
2. Standard G-1, Disclosure 5.A.3 (page 31)  
Response is unclear as rationale given suggests this change should be included under Disclosure 5.A.2.
3. Standard G-1, Disclosure 5.C (page 33)  
Response is unclear as to the county for the maximum in Figure 6.
4. Standard G-2, Disclosure 2.B (page 40)  
Response is incomplete as the actuary, Howard Kunst, is new to the submission and model review process.
5. Standard S-1, Disclosure 1 (page 69)  
Response is incomplete as statistical techniques used for estimation and the corresponding  $p$ -values for the associated goodness-of-fit tests are not given.

CoreLogic, Inc. – CoreLogic Florida Hurricane Model 2017, Risk Quantification and Engineering (continued)

6. Standard S-1, Disclosure 6 (page 71)  
Response is incomplete as appropriate goodness-of-fit test results are not given.
7. Form S-1 (page 174)  
Response is unclear as the historical probabilities do not correspond exactly to the historical frequencies.
8. Standard V-1, Disclosure 8 (pages 88-89)  
Response is incomplete as a description of the relationship between structural and appurtenant structure vulnerability functions and consistency with insurance claims data are not given.
9. Standard A-1, Disclosure 1 (page 109)  
Response is incomplete as a sample calculation for determining the property value is not given.
10. Standard A-1, Disclosure 2 (page 109)  
Response is incomplete as a sample calculation for determining the amount of depreciation and the actual cash value losses is not given.
11. Form A-5.C (pages 235-236)  
Response is unclear as to the county for the maxima in Figures 50 and 51.
12. Form A-5 (page 234)  
Consistency of percentage changes given in Form A-5 with the all model changes combined percentage given on page 31. Clarify the differences.

**Florida International University – Florida Public Hurricane Loss Model V6.2**

1. A list of acronyms used in the submission is not included, non-responsive to Acceptability Process II.A.5.m requirement (page 49) in the *Report of Activities*.
2. Standard G-1, Disclosure 5.A.2 (page 106)  
Response is unclear as changes in the Low-rise Commercial Residential model appear to result in changes to loss costs in Florida.
3. Standard G-1, Disclosure 5.B.1 (page 107)  
Response is non-responsive as “all model changes combined” is not given.
4. Standard G-2, Disclosure 2.C (page 122)  
Response is incomplete as personnel in Figure 29 have not been updated.

Florida International University – Florida Public Hurricane Loss Model V6.2 (continued)

5. Standard G-2, Disclosure 3.A (page 123)  
Response is incomplete as the date of the actuarial review has not been given.
6. Form M-1 (pages 155-157 and 478-479)  
Form M-1 being split between pages 155-157 and 478-479 is non-responsive to the Acceptability Process II.A.5.1 requirements (page 49) in the *Report of Activities*.
7. Form M-3 (pages 159-161 and 486-487)  
Form M-3 being split between pages 159-161 and 486-487 is non-responsive to the Acceptability Process II.A.5.1 requirements (page 49) in the *Report of Activities*.
8. Standard S-1, Disclosure 1 (page 162)  
Response is unclear related to the chi-square goodness-of-fit test for landfalling hurricanes in the final paragraph.
9. Standard V-3.A (page 261)  
Response is incomplete as the impact of mitigation measures on associated uncertainties is not given.
10. Standard A-1 (page 280)  
Standard A-1 is non-responsive to the Acceptability Process II.A.5.d requirements (page 48) in the *Report of Activities*.
11. Standard A-1, Disclosure 1 (page 280)  
Response is incomplete as a sample calculation for determining the property value is not given.
12. Standard A-1, Disclosure 2 (page 280)  
Response is incomplete as a sample calculation for determining the amount of depreciation and the actual cash value losses is not given.
13. Standard A-2 (page 294)  
Standard A-2 is non-responsive to the Acceptability Process II.A.5.d requirements (page 48) in the *Report of Activities*.
14. Standard A-3 (page 295)  
Standard A-3 is non-responsive to the Acceptability Process II.A.5.d requirements (page 48) in the *Report of Activities*.
15. Standard A-4 (page 299)  
Standard A-4 is non-responsive to the Acceptability Process II.A.5.d requirements (page 48) in the *Report of Activities*.
16. Standard A-5 (page 304)  
Standard A-5 is non-responsive to the Acceptability Process II.A.5.d requirements (page 48) in the *Report of Activities*.

Florida International University – Florida Public Hurricane Loss Model V6.2 (continued)

17. Standard A-6 (page 307)

Standard A-6 is non-responsive to the Acceptability Process II.A.5.d requirements (page 48) in the *Report of Activities*.

18. Form A-6 (pages 449-450)

Response is unclear as both the 18<sup>th</sup> and 20<sup>th</sup> floors are listed.

**Risk Management Solutions, Inc. – North Atlantic Hurricane Models, RiskLink 17.0 (Build 1825)**

1. Standard G-3, Disclosure 5 (page 54)

Response is incomplete as other ZIP Code-based databases and the process for updating ZIP Code databases are not given.

2. Standard S-1, Disclosure 6 (page 98)

Response is incomplete as goodness-of-fit results for Amax are not given.

3. Standard V-1, Disclosure 8 (page 113)

Response is incomplete as a description of the relationship between structural and appurtenant structure vulnerability functions and consistency with insurance claims data are not given.

4. Standard V-3.A (page 120)

Response is incomplete as the impact of mitigation measures on associated uncertainties is not given.

5. Standard A-1, Disclosure 2 (page 128)

Response is incomplete as a sample calculation for determining the amount of depreciation and the actual cash value losses is not given.