

SOUTH CAROLINA DEPARTMENT OF INSURANCE

Recommendations from the Hurricane
Model Review Panel

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Public Hearing Regarding the Use of
Catastrophe Models in Property Insurance
Ratemaking in South Carolina

October 9, 2013

South Carolina Bar Conference Center

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- ▣ Introduction
- ▣ Identification of the Models Reviewed
- ▣ General Recommendations to SC DOI
- ▣ Model-Specific Recommendations to SC DOI

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- ▣ Four Firms Submitted Models For Review:
 - AIR Worldwide Corporation (AIR)
 - Applied Research Associates (ARA)
 - EQECAT
 - Risk Management Solutions (RMS)

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- ▣ Recommendations Made:
 - 6 General Recommendations
 - 3 Specific to AIR
 - 2 Specific to ARA
 - 5 Specific to EQECAT
 - 2 Specific to RMS

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- ▣ General Recommendation 1:
 - The DOI should not accept historical claim data for hurricanes as the sole basis for indicating rates that are not excessive, inadequate or unfairly discriminatory.

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- ▣ General Recommendation 2:
 - Models that include tropical storms/depressions in their stochastic storm sets should not be approved for use in South Carolina. Such inclusion of tropical storms and depressions could result in a double counting of the effects of those storms; once in the modeled “hurricane” losses and once again in the rate development for “other than hurricane” portion of the ratemaking process.

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- ▣ General Recommendation 3:
 - SC DOI should not permit the use of any of the following model variations: “short-term,” “near-term,” “medium-term,” “warm phase,” or “warm water.” This is consistent with the practices of the FCHLPM. As the panel states, “if shorter segments (or other subsets) of the historical record are used, the (resulting) loss costs will be even more sensitive to changes in an individual event.”

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- ▣ General Recommendation 4:
 - With each filing of hurricane rates, SC DOI should obtain a model-specific output report, containing sufficient detail to determine whether the modeler or filing insurer has made adjustments or assumptions outside of the workings of the model (which may or may not be reasonable), including but not limited to storm surge, demand surge, and exclusion of (or modifications to) any records from the filer's exposure data set. The modeler or the filing insurer should provide details to the regulator as to how to locate the desired information in the output report. Filings that omit these reports should not be approved by the DOI.

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- ▣ General Recommendation 5:
 - Models may include a certain percentage increase in the loss costs to allow for items such as storm surge losses that are considered as wind losses in the actual claims data. These adjustments are outside of the review by the panel of experts and are not generally permitted by the FCHLPM in Florida. If there is an amount to be added to SC hurricane insurance rates, that amount should be determined by SC DOI with input from those that are affected, including the modeler, but not by the modeler alone.

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- ▣ General Recommendation 6:
 - The panel understands that there is no mechanism currently in place to address future model revisions for South Carolina. It is recommended that SC DOI develop a procedure to address future model revisions, incorporating the recommendations provided by the panel.

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- ▣ AIR-Specific Recommendation 1:
 - AIR Atlantic Tropical Cyclone Models v12.0.1 and v14.0.1 are acceptable for application to SC rate filings.

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- ▣ AIR-Specific Recommendation 2:
 - SC DOI should require filing companies to provide detailed justification for their rates when using the AIR model with regard to regional and temporal variations in vulnerability due to variations in building codes and regional wind speed, specifically pre- and post 2006 building code. The panel judges this to be an acceptable approach, though not their preferred approach, as it puts the onus upon each individual filer to recognize such differences.

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- ▣ AIR-Specific Recommendation 3:
 - SC DOI should require filing companies using the AIR model to declare whether storm surge losses (AIR's default assumption for storm surge leakage is a constant factor) are included in the loss costs used for ratemaking and provide the extent and justification of such inclusion. AIR states "We encourage the SCDOI to ask for the log to gain an insight into the storm surge assumption included in the rate making analysis," a recommendation with which the panel agrees.

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- ▣ ARA-Specific Recommendation 1:
 - HurLoss 6.0 should be allowed to be used for filings in South Carolina. However, the panel has determined that three issues should be addressed:
 - ▣ Treatment of tropical cyclones that do not reach hurricane strength,
 - ▣ Treatment of unknown masonry residential structures (i.e., masonry residential structures that are not identified as either unreinforced or reinforced), and
 - ▣ Treatment of the 2006 South Carolina Building Code.

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- ▣ ARA-Specific Recommendation 2:
 - If ARA HurLoss 6.0 is used for rate filings, the filing company should provide resolutions and justification with regard to the above issues. ARA has agreed to resolve the above issues in Version 6.1. Once implemented, the panel of experts suggests that the SCDOI review the above listed improvements.

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- ▣ EQECAT-Specific Recommendation 1:
 - It is recommended that EQECAT WORLDCATenterprise Version 3.16 which includes Florida Hurricane Model 2011a (accepted by FCHLPM with expiration date of September 2013) may be used for rate filings in SC.

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- ▣ EQECAT-Specific Recommendation 2:
 - If the “larger” EQECAT models (WORLDCAEnterprise Versions 3.16 and 3.13) are used for rate filings in South Carolina, documentation should be required in the rate filing to specify the view of risk (to ensure there is no variation from the long-term historical view of hurricane risk) and to document and justify the differences in hurricane risk models between the Florida specific models and the South Carolina models.

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- ▣ EQECAT-Specific Recommendation 3:
 - It is recommended that if and when RQE v14 (approved by FCHLPM on 8/9/13) is used for rate filings in South Carolina, there are some differences at the zip code level that should be satisfactorily detailed and explained.

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- ▣ EQECAT-Specific Recommendation 4:
 - While the entire hurricane database was used in developing the model, the landfall frequencies for the stochastic hurricane set are lower for weaker storms and more frequent for more intense hurricanes, including Category 5 systems. These frequency variations are acceptable, but should be examined with each new model submitted to the DOI.

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- ▣ EQECAT-Specific Recommendation 5:
 - In order to reflect differences in structural vulnerability due to regional and temporal variations, it is necessary for filing companies using EQECAT's RQE 14 version to use Secondary Structural Modifiers to reflect such variations. The panel judges this to be an acceptable approach, though not their preferred approach, as it puts the onus upon each individual filer to recognize such differences.

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- ▣ RMS-Specific Recommendation 1:
 - It is recommended that RiskLink 11.0 SP2c (accepted by the FCHLPM in 2012) be used for South Carolina rate filings. Any differences from Florida in modeling properties in South Carolina should be documented and justified in such rate filings.

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- ▣ RMS-Specific Recommendation 2:
 - In order to reflect differences in structural vulnerability due to temporal variations, it is necessary for filing companies using models from RMS to use Secondary Modifiers to reflect such variations. The panel judges this to be an acceptable approach, though not their preferred approach, as it puts the onus upon each individual filer to recognize such differences.