Professional Team Report to the Florida Commission on Hurricane Loss Projection Methodology

Applied Research Associates, Inc. (ARA) Remote Review of HurLoss 10.1 January 24, 2022

ARA

Francis M. Lavelle, Ph.D., P.E., Vice President Lauren Mudd, Ph.D., P.E., Senior Engineer Jeff Sciaudone, P.E., Senior Engineer Peter J. Vickery, Ph.D., P.E., Principal Engineer

Professional Team

Paul Fishwick, Ph.D., Computer and Information Scientist Mark Johnson, Ph.D., Statistician, Team Leader Stu Mathewson, FCAS, MAAA, Actuary Masoud Zadeh, Ph.D., P.E., Structural Engineer Donna Sirmons, Staff

On January 24, 2022, a subset of the Professional Team held a remote review to investigate the reported coding error in the ARA HurLoss 10.0 hurricane model that resulted in Type III differences as reported to the Commission on December 21, 2021.

The Professional Team reviewed the revised model HurLoss 10.1 and the extent of the changes in modeled losses from version 10.0 to version 10.1. The changes to Forms A-1, A-4, A-8, and S-5 were reviewed, and their revisions were consistent with the correction made to the model.

The nature of the coding error that caused the demand surge factor for each hurricane event to be computed incorrectly and its correction were reviewed in depth. The Professional Team reviewed the additional code verification tests developed and the tightened criteria for passing those tests that have been incorporated into the modeler's standard model verification procedures.

Reviewed the demand surge model, its documentation and implementation. Discussed variable naming and code improvements.

Reviewed the modeler's document Updating of Code Standards and Verification Procedures dated January 24, 2022.

The Professional Team confirmed no other changes were made in HurLoss 10.1.

Based on the material provided in the January 14, 2022 submission addendum, ARA's presentation of trade secret material and response to Professional Team questions during the remote review, the Professional Team concludes that all of the 2019 hurricane standards are verified for the HurLoss version 10.1 hurricane model.