



LOUISIANA DEPARTMENT OF INSURANCE  
JAMES J. DONELON  
COMMISSIONER

**BULLETIN NO. 2013-04**

**TO: ALL PROPERTY AND CASUALTY INSURERS**  
**FROM: JAMES J. DONELON, COMMISSIONER OF INSURANCE**  
**RE: CATASTROPHE MODEL INTERROGATORIES**  
**DATE: JUNE 10, 2013**

**PURPOSE AND SCOPE**

The purpose of Bulletin No. 2013-04 is to provide assistance to all property and casualty insurers using catastrophe models to support proposed rates filed with the Louisiana Department of Insurance (LDI). While modeling specific to the hurricane peril is the focus of Bulletin No. 2013-04, the guidance provided herein should be used for other perils where applicable.

**BACKGROUND**

The LDI recognizes that catastrophe risk is significant in Louisiana and that accurate and sound actuarial analysis must underlie the costing of property rates. The LDI expects that insurers will utilize the most accurate, reliable and reasonable methods available to estimate Louisiana property rates.

Actuarial standards of practice set forth principles and considerations for an actuary estimating costs associated with the transfer of risk. Of particular relevance are Principles 1, 2 and 3 from the Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Insurance Ratemaking:

- Principle 1: A rate is an estimate of the expected value of future costs.
- Principle 2: A rate provides for all costs associated with the transfer of risk.
- Principle 3: A rate provides for the costs associated with an individual risk transfer.

Adherence to these principles should lead to property and casualty rates which are reasonable, not excessive, not inadequate, and not unfairly discriminatory.

An important tool available to property and casualty insurers for estimating catastrophe risk and allocating the costs associated with that risk is modeling. Specifically, modeling

addresses some of the difficulties inherent in catastrophe pricing, particularly for the hurricane component. Difficulties faced by the actuary include predictability of low frequency, high severity events and lack of relevant historical data.

While modeling is a recognized tool in the costing of property and casualty insurance, costing of reinsurance treaties and managing an insurer's coastal exposure, catastrophe models are complex computer algorithms used to represent the catastrophic phenomena and require expertise in various sciences including actuarial, statistical, engineering, meteorological and computer sciences. As such, these models are not easily understood, could contain significant and undetected errors, and are difficult to benchmark against established norms. Due to its lack of transparency, the term "black box" has been used to describe a model's inner-workings.

Moreover, the LDI recognizes that catastrophe modeling continues to evolve and is not a perfect science. Estimates from one model to another, or one insurer to another using the same model, may vary significantly. Models contain uncertainty in parameter and process selection but, despite the uncertainty, are still good tools to estimate low frequency, high severity event loss.

The guidance provided in Bulletin No. 2013-04 is designed to document and increase transparency of both what goes into a catastrophe model and the resulting output of the catastrophe model as it relates to Louisiana property ratemaking. Also, Bulletin No. 2013-04 will assist the LDI in identifying abnormal loss estimates to determine whether or not they are reliable or reasonable. Each insurer that files a rate which includes a provision generated by a catastrophe model must provide information about the model, and for hurricane models, its input, its output, and how the output was used to produce the proposed rates. This information will allow the LDI to determine how individual insurers use a model's output in proposed Louisiana property rates, compare models across vendors at any point in time and, as a model from a single vendor evolves, monitor the differences between model revisions.

## **RELEVANT LOUISIANA STATUTES**

Louisiana statutes allow for the consideration of a wide variety of data and analysis methods when establishing property rates. La. R.S. 22:1454(B) states, in part:

In determining whether rates are excessive, inadequate, or unfairly discriminatory, consideration may be given to the following items:

- (1) Basic rate factors. Due consideration shall be given to past and prospective loss and expense experience within and outside the state, catastrophe hazards and contingencies, events, or trends within and outside the state, dividends or savings to policyholders, members, or subscribers, and all other relevant factors and judgments.

La. R.S. 22:1464(A) gives the LDI the authority to require an insurer or rating organization to provide relevant information and other data necessary for the LDI to determine whether a filing meets the requirements of Chapter 4, Part IV, Subpart O of the Louisiana Insurance Code. To expedite the review of a filing, data and the forms required to make a filing "complete" are detailed in LDI's Insurance Rating Handbook which can be found on the LDI website.

### **CONFIDENTIALITY**

The LDI will treat all material provided in the Catastrophe Model Interrogatories (both Part A and Part B) as information supplementary to the rate filing which will be maintained as confidential while under review by the LDI. However, pursuant to La. R.S. 22:1464(D), a rate filing, and all supplementary rate information and supporting information pertaining thereto, shall be open for public inspection pursuant to the time frames set forth in La. R.S. 22:1451(C)(1). This policy shall apply regardless of the outcome of the LDI's review (i.e., approval, disapproval, or withdrawal of the filing) unless the filing insurer or modeler has requested confidential treatment. To make the request for confidential treatment the filing insurer or modeler shall clearly mark or stamp on all such material the words "DOCUMENT CONTAINS CONFIDENTIAL PROPRIETARY OR TRADE SECRET INFORMATION." The request for confidential treatment will be handled by the Commissioner in accordance with the requirements of La. R.S. 44:3.2.

The LDI's filing review will be more expedient when the insurer includes Catastrophe Model Interrogatories Part A in the rate filing packet. Pursuant to La. R.S. 22:1464(D), the Catastrophe Model Interrogatories Part B is deemed to be supporting information for the rate filing. As such, it is beneficial to file Catastrophe Model Interrogatories Part B under separate cover and in advance of its use as supporting information by an insurer and not as part of any insurer's rate filing packet. Once on file with the LDI, a filing insurer can simply refer to the modeler's Catastrophe Model Interrogatories Part B within the insurer's filing.

### **FILING REQUIREMENTS**

A personal property rate filing (dwelling, homeowner or mobile home) whose support relies on catastrophe modeling must file the Catastrophe Model Interrogatories with the LDI. For commercial property filings, the Catastrophe Model Interrogatories are not mandatory but adequate support of the catastrophe load in the rates is still required.

The forms provided in Bulletin No. 2013-04 should be used only when modeled catastrophe loss provisions are included in the filed rates. These forms should be filed in an electronic format with the LDI (e.g., as an attached PDF). In the event that there is insufficient room on an interrogatory form, attach separate sheets as needed.

If an insurer is filing to adopt loss costs (or rates) of an insurance rating organization which include modeled loss provisions (hurricane or any other peril), completion of these forms is not required. It is the responsibility of the insurance rating organization to file with their loss costs actuarial support and the Catastrophe Model Interrogatories Part A as required. Note that Part A of the Catastrophe Model Interrogatories is to be completed by the insurer and Part B is to be completed by the modeling company.

If an insurer is using more than one model to support proposed rates in a Louisiana rate filing, the insurer should complete Catastrophe Model Interrogatories Part A for each model used. For each model used, the modeling company should file with the LDI, or already have on file with the LDI, Catastrophe Model Interrogatories Part B. In other words, a rate filing will not be statutorily complete unless, for each model supporting the proposed rates filed, both Part A and Part B of these interrogatories are on file with the LDI.

### **Insurer Filing Requirements**

For each modeled peril, the insurer shall complete and file:

- Part A - Insurer Certification
- Part A - General Information

For the modeled hurricane peril, the insurer shall complete and file:

- Part A - Hurricane Modeling Information

### **Modeling Company Filing Requirements**

For the modeled hurricane peril, the modeler shall complete and file:

- Part B - Modeler Certification
- Part B - General Information
- Part B - Meteorological Component
- Part B - Vulnerability Component
- Part B - Loss Estimates
- Part B - Model Changes
- Part B - Sensitivity Tests
- Part B - Exhibits A through W
- Part B - Appendix A

Though not mandatory, the LDI requests the modeler file Part B of these Catastrophe Model Interrogatories for the current model version available for use in Louisiana as soon as possible. By making this filing now, the filing requirement for Part B will be fulfilled and expedite a rate filing review when used to support a rate filing on or after January 1, 2014.

For purposes of Bulletin No. 2013-04, a “model release” means a version of the model that contains any change from the immediately preceding release on file with the LDI. However, if a modeler determines that the Louisiana change to modeled output in a new model release is not statistically significant, then the modeler need only submit an appropriate explanatory memorandum using Catastrophe Model Interrogatories Part B – Model Changes as a discussion guide.

As stated previously, the modeler shall submit Catastrophe Model Interrogatories Part B to the LDI for review. Insurers may utilize any model release unless it has been rejected by the LDI. Insurers are encouraged to contact the LDI at any time to discern which model releases have been filed with the LDI before the insurer performs new modeling analysis affecting the insurer’s Louisiana rates. Note that LDI approval of filed rates which include support from a model should not be construed as approval of the supporting model, but is merely approval of the filed rates.

The following files can be found on the LDI website and shall be used to complete the Catastrophe Model Interrogatories Part B:

- A standard track file which includes a range of wind speeds in each zip code for use in the vulnerability analysis - LDI\_Track\_2013.xlsx
- The LDI standard exposure file which includes exposure in each zip code - LDI\_Exp\_2013.xlsx
- An exposure-grid file for a homeowner wood frame structure, which will be used in the sensitivity analysis - LDI\_Exp\_Grid\_2013.xlsx

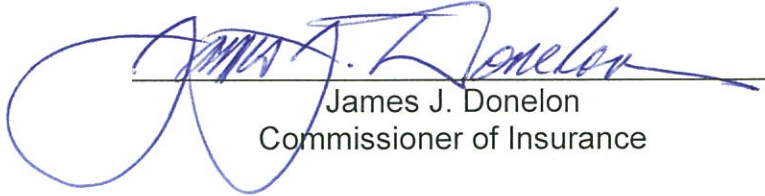
When making a rate filing, an insurer may utilize any model filed by a modeler that is in compliance with Bulletin 2013-04 to support the insurer's proposed rates. The LDI will review the proposed rates to determine whether they are in compliance with applicable statutes and regulations, and are actuarially justified.

### **EFFECTIVE DATE**

Bulletin No. 2013-04 is effective beginning June 10, 2013. However, Bulletin LIRC 99-02 will not be rescinded until January 1, 2014. Therefore, completion of these interrogatories will be mandatory with rate filings received by the LDI on or after January 1, 2014. For filings received on or before December 31, 2013, the LDI will accept as support interrogatories generated under either Bulletin LIRC 99-02, Computer Model Interrogatories or under Bulletin No. 2013-04, Catastrophe Model Interrogatories. After January 1, 2014, only Bulletin No. 2013-04, Catastrophe Model Interrogatories will be accepted in support of a rate filing.

Questions regarding Bulletin No. 2013-04 should be directed to the LDI, Actuarial Division, at (225) 342-4690.

Baton Rouge, Louisiana, this 10<sup>th</sup> day of June 2013.



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Commissioner of Insurance