Alabama – Filing Requirements in SERFF

PLEASE NOTE: We have a particular interest and emphasis on sub-point h. under section "2) A description of the dataset used including:"
When responding, please number and letter your answers that correspond to our questions.

1) An overview of the model including:
   a. technical memorandum describing the steps taken in the construction of the model;
   b. disclosure of the assumptions used in constructing the model;
   c. a description of judgment used throughout the modeling process;
   d. a description of any preliminary analyses, data checks and logical tests performed on the data and the results of those tests;
   e. a narrative of each test statistic explaining its relevance and how the statistics were used to select the optimal model
   f. a discussion of how the model can be successfully implemented;
   g. the modeler's qualifications;
   h. the software used;
   i. the timeframe involved;
   j. a description of the testing procedures;
   k. any constraints on the model;
   l. any tests for and adjustments made for correlation;
   m. credibility standards and considerations;
   n. how overfitting was addressed;
   o. the goal of the model (what is optimized?).

2) Describe the dataset used including:
   a. the variable selection process;
   b. description of the data and rating variables including whether discrete or continuous;
   c. offset variables and target variables;
   d. a discussion of adjustments made to the data set;
   e. the treatment of large losses within the data set;
   f. sample records with headings;
   g. a data dictionary showing the abbreviations used in the modeling process and the standard English meaning for each variable;
   h. an intuitive argument for why an increase in each variable should increase or decrease frequency, severity, loss cost or expenses incurred
   i. correlation tests;
   j. company(ies) included, geographical scope, experience period, method of organization, valuation dates and method of compiling losses for insurance data;
   k. source of any non-insurance data (customer provided or other) including who owns it and how customers can obtain and correct errors on their records;
   l. full documentation of any scores used as input variables including sources and score formula;
   m. whether any of the variables are subject to the fair credit reporting act;
   n. rating variables considered but not used and reasons for not using.

3) Specifics about the GLM model(s) including:
   a. the link function;
   b. the error distribution;
   c. tests for goodness of fit including log-likelihood and deviance;
   d. GLM weights;
   e. volume offsets;
   f. any adjustments for scaling for discrete variables;
   g. whether loss ratio, pure premium or frequency/severity analyses were performed and if separate frequency/severity modeling was performed, how pure premiums were determined;
   h. whether the modeling was performed on a by coverage or by peril basis and the reasons therefore;
   i. any transformations for continuous variables;
   j. the coefficients for each variable;
Alabama – Filing Requirements in SERFF

k. how the model was tested for stability over time;
l. provide support demonstrating that the GLM assumptions are appropriate (for example, the choice of error distribution, link function, that predictor variables are linear, etc.)

4) Model results of goodness of fit tests with written interpretation including:
a. partial residual plots for each variable;
b. correlation matrix;
c. for each discrete variable level, parameter value for each level including the WALD confidence intervals, WALD chi square tests and p values;
d. for overall discrete variables, type 3 chi square tests, p values and F tests;
e. for continuous variables WALD confidence intervals, WALD chi square tests and p values;
f. the use of the Akaiki Information Criteria in your model;
g. Gini coefficient;
h. lift charts;
i. how coverages or perils were treated if there was not enough credible data to model.

5) An explanation of why you believe this model is better than the one it is replacing. How did you form that conclusion? What metrics did you rely on?

6) An explanation of how the model was used to adjust the rating algorithm.

7) The rationale for using a model that is more granular than the rating plan (if applicable).

8) Current, indicated and proposed rating factors;

9) Explanations for filed rating values that deviate from the indications and supporting information/analyses for the differences;

10) Confidence intervals;

11) Histograms of rate changes and common characteristics of any outliers