24. (3 points)

Given the following information, describe four ways in which the Appointed Actuary (AA) likely did not follow the appropriate standards of practice or educational guidance for the DCAT analysis and briefly describe what the appropriate action would have been in each instance.

An AA is preparing the DCAT analysis for a federally-regulated Canadian property and casualty insurance company which began operations in 2012. The most recent fiscal year-end for the company is December 31, 2017 and the AA performs the analysis in July 2018. The company's business plan incorporates actual results through December 31, 2017.

The AA begins by reviewing the operations of the 2017 year, including the statement of income and balance sheet. The review includes the source of earnings and several regulatory measures of capital adequacy. The AA then prepares the base scenario using the company's business plan as a starting point. The forecast period extends from December 31, 2017 through December 31, 2019. After a review of the results, the AA concludes that the premium growth of the business plan is aggressive and unrealistic given the growth observed in 2017, and materially reduces this assumption. The MCT ratio of the company remains above 150% throughout the forecast period in the base scenario.

Next, the AA reviews the various risk categories to which the company may be vulnerable. The AA decides to first determine how far each risk factor has to be changed in order to drive the insurance company's surplus negative during the forecast period, then adjusts the level of the risk factor to be consistent with a 95th to 99th percentile range, with most scenarios in the top half of that range. The AA decides that the reinsurance risk and off-balance-sheet risk categories are not relevant and does not perform any analysis on them.

The AA applies the risk category changes in the first forecast year to model the plausible adverse scenarios and stratifies the scenarios using their preliminary MCT ratios at the end of the forecast period. The worst five scenarios are the following:

			MCT at December 31, 2019	
Rank	Risk Category	Scenario Tested	Preliminary	Final
1	Claim Frequency/Severity	Occurrence of Multiple Catastrophe Events	95%	91%
2	Premium	Premium Volume Significantly Higher	110%	115%
3	Policy Liabilities	Misestimation of Policy Liabilities	119%	115%
4	Inflation	Significant, Rapid, Sustained Increase	142%	142%
5	Investment	Decrease in Value of Equities	166%	166%

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The AA then selects three scenarios, *Occurrence of Multiple Catastrophe Events*, *Premium Volume Significantly Higher*, and *Misestimation of Policy Liabilities* for further analysis. For these scenarios, the AA considers system-wide interactions, ripple effects, macroeconomic effects, and possible corrective management actions. The final MCT ratio results are also included in the table on the previous page.

Finally, the AA produces the DCAT report, including all applicable sections with a disclosure for reasons for deviating from the business plan's premium assumption in the base scenario. The AA includes a signed opinion on the insurance company's financial condition. Because the *Occurrence of Multiple Catastrophe Events* scenario's MCT ratio falls below the minimum requirement prescribed by Office of the Superintendent of Financial Institutions Canada (OSFI), the AA reports that the insurance company's financial condition is not satisfactory.

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QUESTION 24	
TOTAL POINT VALUE: 3	LEARNING OBJECTIVE(S): C2

SAMPLE ANSWERS

Any four of the following answers were expected:

- The actuary considers a two year forecast period for all scenarios. Standards state that the forecast period for a typical P&C insurer would not be less than three fiscal years, and so the actuary should forecast to December 31, 2020.
- The actuary reviewed a single prior year of recent operations. Standards of practice state that the investigation would review normally at least three years of operations including the financial position at the end of those years. The actuary should review operations from at least 2015-2016 in addition to 2017.
- The actuary only performs further analysis on three scenarios, however all scenarios that cause the insurer to fall below the supervisory target capital level during the forecast period should be subject to further reporting. The actuary should model ripple effects, etc. for the inflation scenario as well.
- The actuary studied ripple effects, macroeconomic effects, system-wide interactions and management corrective actions, but failed to consider possible regulator action. Given that four scenarios had the MCT ratio fall below the supervisory target and one fell below the minimum target, it would be reasonable for the actuary to assume that the regulator might step in and restrict or stop the issuing of new policies.
- The actuary reports that the insurer's financial condition is not satisfactory. However, the MCT ratio of 91% means that the company still has equity. The requirement for satisfactory financial condition that the insurer meets the supervisory target capital requirement under the base scenario and that the in all scenarios the assets are greater than the liabilities. While it doesn't mention the MCT in the first forecast year for the adverse scenarios, this appears to be the case.
- The actuary stratifies the MCT ratios of the scenarios at the end of the forecast period; however the actuary should consider the MCT ratio throughout the forecast period (and its difference from the base scenario) to measure each scenario's risk to the insurer. Some scenarios may have been worse at December 31, 2018.
- The AA ranks scenarios according to MCT. The AA should rank scenarios based on surplus sensitivity.
- If the base scenario is materially different from the business plan and the difference is not due to a reforecast of the business plan, then the AA should seek confirmation or an explanation of the new assumptions from the directors or senior management.

EXAMINER'S REPORT

Candidates were expected to identify the ways in which the actions of the AA deviated from the Standards of Practice.

Common errors included:

- Not identifying four items.
- Incorrectly accepting the AA's statement regarding the company's financial condition, and then executing management actions, providing deadlines, and notifying OSFI.

- Incorrectly suggesting the AA was not in accordance with the SOP when the AA discarded the results of the reinsurance risk factor and the off-balance sheet risk factor.